



"IN A NUTSHELL"

— DIO LEWIS —

Bacilli in Butter.—It is generally known that milk affords a dangerous vehicle for the dissemination of disease, but the ~~fact~~ ^{undesirable property} is shared by butter is information at once of a novel and startling kind, and such as should put us on our guard. Yet, according to recent researches, there were contained in one gramme of butter (as much as would go on the point of a knife) 2,465,555 micro-organisms from the centre of the pat and as many as 47,250,000 on the outside. In fact, in some cases it is tolerably certain, it is stated, that the number of organisms swallowed with a moderately large piece of bread and butter may exceed that of the whole population of Europe. Butter kept in a refrigerator showed a marked reduction in the number of bacteria—a result which is also obtained by the addition of common salt. Samples of artificial butter, curiously enough, were invariably found to be much poorer in bacteria than ordinary butter; thus, while the smallest number found in one gramme was 747,059, in real butter considerably over two million microbes was the minimum. Two varieties of bacilli have been isolated and described, and inasmuch as they were found to be constantly present in butter they were probably specific micro-organisms of a non-pathogenic character. But, at any rate, it seems clear that butter as well as milk is capable of carrying and fostering organisms, and on this account it behooves us, under certain circumstances, to melt our butter to boiling point in addition to boiling the milk. We must not, however, forget that nature, which has been so lavish in the production of bacteria, has probably for-

MUSTARD PLASTER.

In making a mustard plaster use no water, but only the white of an egg; a mixture is thus formed which will draw perfectly, but will not blister or break the skin. Especially suited for young and tender skin.

EARACHE.

Take a small piece of cotton batting or cotton wool, make a depression in the centre with the

finger, and fill it up with as much ground pepper as will rest on a five cent piece; gather it into a ball and tie it up; dip the ball into sweet oil and insert it in the ear, covering the latter with cotton wool, and use a bandage to retain it in its place. Almost instant relief will be experienced.

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COLD IN HEAD.

This can be cured at once if taken care of at the very beginning. Dissolve a tablespoonful of borax in a pint of hot water; let it stand until it becomes tepid; snuff some up the nostrils two or three times a day, or use the dry powdered borax like snuff, taking a pinch as often as required. At night have a handkerchief saturated with spirits of camphor; place it near the nostrils so as to inhale the fumes while sleeping.

ACHING TEETH.

Split an onion, roast it, and bind while hot on to the wrist, over the pulse, on the opposite side from the aching tooth.

The first rule of importance is to never neglect a call of nature, no matter how slight. Delay is the primary cause; the business man must drop his work; the woman her household duties; the indolent their idle fancies; the child its toy; for every moment lost is hard to come by. Women must not allow their modesty to overcome their natural desires; they should not be so morbidly conscious as to think everyone in a railway car is "looking at them." Mothers should impress upon their children this cardinal rule, and make them observe it, particularly upon their daughters, for young girls are especially sensitive about such matters.

The second great rule is to make a voluntary effort daily, whether the desire exists or no. This should be done at a fixed hour, in the morning preferably, a half hour or so after the meal. Excessive straining should be avoided, to prevent which it is best to keep the mouth open; plenty of time should be taken, though the efforts need not be continued too long; 15 to 20 minutes is enough. Strict observance of this rule will accomplish more for the patient than all other means for relief. The results will possibly be discouraging for some time, and many are silly enough to become despondent over lack of success, and give up, especially those of nervous temperament.

ful.

"A teaspoonful" holds about a drachm, liquid measure, more if very full. A tablespoon is equal to four teaspoonsful, four drachms, or half an ounce. One ounce equals two tablespoonsful, or eight teaspoonsful. All these amounts are approximately correct, and will do for measurement of drugs, not of a poisonous nature, and given in small doses. A teaspoon holds about sixty drops, depending upon the consistency of the liquid and fullness of spoon.

Castor Oil.—Whenever it is desired simply to clean out or unload the bowels this is one of the best drugs for the purpose; it is unirritating, but should not be used continuously, however, to relieve constipation. At the beginning of fevers if the bowels are confined this is a good drug to use. It is an excellent purgative for children. Where there is diarrhea due to some irritating food that has been eaten, or due to over-loading the stomach, a dose of castor oil should be taken to sweep out this surplus, or offending material. The dose for a child one year old is a half to one teaspoonful; for an adult one to two tablespoonsful. Probably the best way to take it is floated on hot lemonade, which effectually disguises the taste; another good way is in coffee. It may also be added to injections, making them more effi-

the foundation for

Tincture of Iodine.—Iodine is useful as a counter irritant, in cases where the irritation is to be long continued and where a large surface is to be covered. In inflammatory affections of the lungs, painting the affected side, or in bronchitis, or cold over the middle from the base of the neck, will relieve pain and congestion. Also in sore throats it is very good, painting the outside especially over tender points. To be efficient the part painted should be made almost black in color, which generally requires two coats, if not more. It should be handled with care, as the stain will not come off until it wears off. A few drops placed in a tumblerful of water make a splendid douche for use in nasal catarrh. Painted over a sore or sprained joint it will relieve the soreness, and around an inflamed spot (not over it) will subdue the inflammation.

Boric Acid.—This powdered (not borax, which is the salt of the acid) is useful as an application to wounds or cuts, or mixed with vaseline for burns. Added to water and applied in strong solution it is a remedy for excessive perspiration, and in weak solution it is a splendid application for sore eyes. The water used to make this eye wash should be filtered first, then boiled, and the acid afterward added. An eye dropper may be used to drop it in the eyes. It also makes a useful mouth wash for sore mouth in children or adults.

KEEPING FRUIT AND VEGETABLES.

It is surely of as much consequence to know how to keep fruits and vegetables as it is to know how to produce them, and yearly more and more thought and attention are bestowed on the subject of their preservation. It appears that experiments in France have shown that fruits and vegetables stored under ordinary conditions, but heavily dusted with lime, will resist decay for a long time. Potatoes layered in lime kept for 14 months, and were in as good condition as when dug. Beets, onions, apples, grapes and quinces similarly treated kept well for varying periods, but all for several months longer than they would have done ordinarily. The lime keeps away moisture, prevents the fruit from absorbing unpleasant odors, and destroys any microbes that may have found a resting place upon the skin or about the stem. This is a preventive within reach of all, and much cheaper than cold storage.—*Tirron and Farmer.*

Constipation is too often a mere habit of the body brought on by neglect and lack of attention to the calls of nature. Such cases are especially amenable to treatment. To this class belong many business men who engaged deeply with their affairs, put off matters which appear of slighter moment from time to time and finally establish a habit which they begin to notice because of the train of dyspeptic and nervous symptoms which follow. Sedentary habits and occupations in themselves have a tendency to cause constipation. It is for this reason partly that women are so prone to it, also because their modesty frequently prevents them when in public places and sometimes at home from attending to themselves; further, there are diseases and neurotic conditions peculiar to the sex which often have constipation as a secondary result. Diet is another frequent factor in bringing about the condition in people who confine their drinking to tea, coffee or milk, or who eat meat, eggs and other unwholesome nutritious foods.

Water is too little valued by the generality of people as a remedy, yet it is one of the most valuable. It is not only a food—three quarters of the body, by weight, are composed of it—but a medicine which is not properly replaced by the use of tea, coffee or milk. If more water were consumed and less beverages there would be fewer dyspeptics, rheumatics and bilious sufferers. A glass of water taken at night before retiring and the first thing in the morning will often obviate a tendency to constipation, and with dyspeptics a glass taken hot or cold before meals will be found efficacious, washing out the stomach and putting it in better condition to digest the food. With a little lemon juice added and drunk freely it is useful in rheumatism. As a means of applying heat and cold it is invaluable. In the first stages of a sprain if hot water is applied, hot as can be borne, and the application be renewed constantly, the following day will see the part comparatively free from soreness and capable of being used. If it is an ankle the foot may be placed in a foot tub of warm water, the heat being raised by addition of hot water and the temperature being kept up to the limit of endurance for an hour or so. Similarly in rheumatism, hot baths and applications are useful.

Collodion—This is a mucilaginous liquid used as a protective for cuts and small wounds, for which purpose it is much better than corn plaster and more easily applied. The wound should first be thoroughly washed out with very warm water, which has been previously boiled and to which a small amount of salt has been added. The surrounding surface should be then dried with a perfectly clean cloth and two or three layers of thin cloth—cheesecloth or gauze is best—applied just large enough to a little more than cover the hurt. If the part is a rounding one little nicks should be made in the sides of the cloth or V-shaped pieces cut out to make it conform accurately to the surface. Then the collodion should rapidly be painted over with a camel's hair brush if it is of proper consistence (it should not be thick). It will soak through the cloth, pasting it closely to the skin and making a hard, impervious dressing to the wound. Two or three coats should be rapidly applied one over the other. This is a very neat way of dressing cuts and small wounds. It should be kept tightly corked, not smelt of, or taken near the fire, as it contains ether.

Of dietetic measures, one of the most important is the liberal use of water: a glass should be taken in the evening before retiring and one in the morning before breakfast. Flint recommends adding a teaspoonful of table salt if the simple water is not efficient. Water should be used with the meals in place of tea and coffee, until the bowels become regular. Strong tea or coffee always constipates. Persons who are hearty meat eaters should restrict themselves to its use once a day or combine it with a liberal use of vegetables. Vegetables are in themselves a remedy of inestimable value; they act by distending the bowels and stimulating them to action; the largest part of vegetable matter passes through the alimentary canal unabsorbed. People eating highly nutritious food (meats, eggs, milk, etc.), of which the largest part is digested, are especially benefited by such diet. Spinach, lettuce, cabbage, turnips, squash, etc., and fruits fresh, dried or canned, if eaten freely of at all meals will often be all that is necessary to effect a cure. Graham bread, corn bread and rye bread should be used in preference to wheat bread, unless they disorder digestion, which they will occasionally do in dyspeptic cases.

Tempering choice viands are not within the reach of every purse, but good, simple, wholesome food is. The poorest man can afford to drink milk, and milk contains every essential needful for the sustenance of vitality and the restoration of lost powers. There are so many ways of preparing milk either alone or in combination with eggs, fresh vegetables as in soups, etc., that one cannot exclaim at the monotony. First of all try boiled milk, bearing in mind that milk may be contaminated and that boiling effectually ends the possibility of danger from it. If cold milk is more grateful than hot, drink it cold, taking care to have no ice in direct contact with it. Put the milk in bottles or kettles and let these be in contact with the ice. Cultivate the habit of drinking eight or ten glasses of milk every day. If this is done it will be safe enough to omit meals occasionally. Milk does not seem to agree with some few persons, and for them three or four ounces daily of cream will prove a most excellent food. Hot milk is more effective in relieving nervousness and fatigue than any alcoholic preparation, and is far less expensive. Many "incurable" maladies may be put to flight by living on a milk diet—in 10 days one will be improved, and a few months will find health fully restored.

INFECTION

HOW TO IMPROVE A VAPOR BATH.

Set a red-hot brick on end in a can, small bath or other suitable vessel; place the latter under a chair, on the seat of which a piece of flannel is spread. The patient, undressed, sits on this flannel, and he and the chair are well wrapped in blankets to exclude the air; his head is to be uncovered. Open the blankets a little at the bottom and carefully pour about a pint of boiling water over the brick, and keep up the steam by occasionally repeating this. The patient remains in the bath until relieved by perspiration. To make a vapor bath in bed, with hot wet bottles, fill about six oval-shaped half-gallon stone bottles with boiling water; cork well, and fold each in hot wet flannel. Lay over the bed a waterproof sheet and a blanket; place the patient on these, cover him with a blanket and distribute the hot bottles about him—one to each side, to the calf of each leg, and to the sole of each foot. Wrap up well with extra blankets, and tuck in to retain the heat. For the spirit lamp bath, place a damp towel over the seat and before the front of a cane bottom chair, under which a spirit lamp is lighted, and over the lamp a tin vessel with boiling water in it. The patient, enveloped (except the head) in four or more blankets, sits on the chair until free perspiration occurs.—Hall's Journal of Health.

ical Review.

The Virtues of Salt.—A little salt rubbed on the cups will take off tea stains. Put into whitewash it will make it stick better. As a tooth powder it will keep the teeth and gums hard and lustrous. It is one of the best gargles for sore throat and a preventive of diphtheria if taken in time. Use salt and water to clean willow furniture; apply with brush and rub dry. Salt and water held in the mouth after having a tooth pulled will stop the bleeding. Prints rinsed with it in the water will hold their color and look brighter. Two teaspoonfuls in half a pint of tepid water is an emetic always on hand, and it is an antidote for poisoning from nitrate of silver. Neuralgia of the feet and limbs can be cured by bathing night and morning with salt water as hot as can be borne. When taken out, rub the feet briskly with a coarse towel. Salt and water is one of the best remedies for sore eyes, and if applied in time will stop the inflammation. Silk handkerchiefs and ribbons should be washed in salt and water and ironed wet to obtain the best results. Food would be insipid and tasteless without it. Hemorrhages of the lungs or stomach are promptly checked by small doses of salt.

Epsom Salts.—This drug acts by drawing water from the blood into the bowels and therefore depletes. It is of value in congestive conditions and rheumatic, as a purge, or where very rapid action is required. It is the least irritating of the salts unless taken in very concentrated solution, and should be preferred to the citrate of magnesia for this reason, even if less agreeable to take. It should not be used continuously except in persons of full habit, who may occasionally derive benefit from its use. A good way where used as an habitual purgative is to dissolve one ounce in a pint of water, taking a wineglassful or tablespoonful before breakfast in a glass of water. In France an ounce is added to a pint of water, with two drachms by weight of ground and browned coffee; the mixture is then boiled, strained, afterward sweetened, and taken as before mentioned, the coffee disguising the bitter taste of the salts.

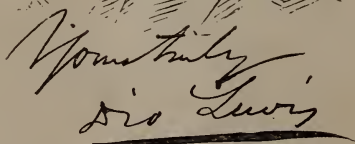
Mustard Flour.—Is useful as a counter irritant in inflammations; when severe action is required it should be simply mixed with water, where slight effect is desired it should be diluted with half flour, or with four or six times as much flour if used on a child. A mustard plaster is useful where a not very large surface is to be covered. Iodine is better for use on the throat. Properly prepared, the flour after being mixed should be spread on a piece of cloth of the size of part to be covered, and then another thin cloth over this, to go between the mustard and skin, which prevents the plaster from adhering when taken off. In cases of poisoning, where it is desired to rapidly empty the stomach, a tablespoonful of the flour in a glass of warm water will act as a prompt emetic.

Capsicum, Cayenne or Red Pepper.—Red pepper is derived from a berry which is found in tropical climates; the berry is easily known by its hot, pungent taste. Red pepper is a most excellent stimulant, and is especially useful in conditions of dyspepsia. There are many ills which it will help, and in throat affections it is indeed a curative. For colds, when one is hoarse and the chest feels heavy, oppressed and "stuffy," red pepper is most grateful. It enables one to expel the mucus and phlegm after having had a few doses. In all low conditions of vitality, especially those caused by loss of sleep, exposure to wet and damp, and from insufficient and poor food, red pepper will be found a very valuable tonic. After a journey or a day or night of fatigue it is refreshing and restful. For the old and feeble there is no stimulant any better. For heartburn it is a very excellent remedy.

Among the various preparations of red pepper, the powdered form is the best known and for general home use is quite as good as the liquid and stronger forms. The easiest way to take red pepper is to sprinkle it upon the food, but as this would be an unpleasant dose for many persons it would be well to try other modes of administration. Make the powder into pills about the size of a small pea—a little molasses will make the pepper into a mass so that it can readily be moulded into pills of the desired size. One or two pills may be taken after each meal. A liquid dose is more acceptable in treating colds, sore throat and exhaustion following upon prolonged exertion. Add a teaspoonful of pepper to a cup of boiling water, and take a teaspoonful of this mixture every five or ten minutes, or at longer intervals if the burning is too severe. A valuable gargle in scarlet fever may be made by combining two teaspoonfuls of red pepper, one teaspoonful of table salt, one teacupful of boiling vinegar and one teacupful of boiling water.

MILK INSTEAD OF MEDICINE.

Wise physicians always prescribe a diet instead of a drug for a patient whenever his illness can be cured by food alone. The food is one of the most important factors in moulding the life of an individual; both the mind and the body require it for their best development. We too seldom realize that much of our bodily discomforts arise from having had an insufficiency of nourishing food. We stoutly deny being underfed when our doctor says, "You need more food." Six meals a day would barely supply fuel enough to keep the fire burning in the average American woman or man of to-day! The breadwinner of the family comes home from his business at night too tired, too nervous to eat. Very possibly he has not tasted food all day since he ate a hasty breakfast of a roll and a cup of coffee. Is it any wonder such a man is irritable and soon becomes a sufferer from nervous prostration? The lack of and insufficiency of nutritious food puts a human being in a condition to die of any complaint. It is not the well-fed that die of consumption—it is they that have no time for eating and resting. The healthiest and longest lived are those that have leisure enough to eat their meals and do eat them. Food keeps the blood vessels full of good blood—disease germs floating about cannot find a lodging place in well-nourished persons.



IN A NUTSHELL,	-	-	-	-	-	"Capital."
OUR GIRLS,	-	-	-	-	-	"Spicy."
NEW GYMNASTICS,	-	-	-	-	-	"Most sensible."
OUR DIGESTION,	-	-	-	-	-	"Jolly."
CAMP LIFE IN CALIFORNIA,	-	-	-	-	-	"Humorous."
WEAK LUNGS,	-	-	-	-	-	"Invaluable."
OUR SECRET SINS,	-	-	-	-	-	"A sensation."

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IN A NUTSHELL.

Suggestions to American College Students.

BY

DIO LEWIS, A.M., M.D.,

Author of "NEW GYMNASTICS FOR MEN, WOMEN AND CHILDREN," "OUR
GIRLS," "WEAK LUNGS, AND HOW TO MAKE THEM STRONG," "OUR
DIGESTION; OR, MY JOLLY FRIEND'S SECRET," "GYPSIES;
OR, WHY WE WENT GYPSYING IN THE SIERRAS,"
"CHASTITY; OR, OUR SECRET
SINS," ETC.

*Interesting notices of this work from College Presidents, and others, may be
found on pages 6, 182, 183, 184, and 185.*

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IN A NUTSHELL.

BY DIO LEWIS.

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GENTLEMEN :

Students of American Colleges :

After long devotion to the cause of health, I come to you with the best fruits of my life-thought, and ask permission to lay them at your feet. I bring no hobbies, but a few simple statements of the fundamental laws of health.

Doubting, hoping, I strive in this little book to awaken your interest in the vital conditions of a sound mind in a sound body.

Of the importance of my theme, of the joy of perfect harmony in this dual being, of the precious treasures in the Bank of Health, there can be among intelligent beings but one thought and one aspiration.

Yours respectfully,

DIO LEWIS.

BIBLE HOUSE, NEW YORK.

BUILDING A BRAIN.

Our present life is signalized by a union between soul and body. All attempts to disturb the harmony of this marriage tie are futile and mischievous. The devotees of India crawl into caves, cultivate long hair and dirt, and starve and torture themselves to emphasize their hatred and loathing of these vile imprisoning bodies. They devoutly believe that the soul can rise only as it climbs the ruins of the body. This struggle to divorce the soul from the body has appeared among many peoples. We have not altogether escaped it. With many of us a pale, languid woman is more of a lady than a rosy, robust one; and a drooping, sepulchral clergyman more of a saint than a broad-chested, be-whiskered, fun-loving one.

We are just beginning to apprehend the spirit of the old Greek, and to regard the body as an honorable and beautiful part of man. Already we speak of building a perfect body, crowned by a perfect brain as at once the greatest problem and grandest hope of the race.

CLIMATE.

Of all the agencies which determine our destiny, climate is the most potent. A climate with sharp alternations of heat and cold, calm and fury, rouses the elasticity of muscle and brain. The sharp and severe changes in the climate of our Northern regions make that part of our country the breeding-place of strong, wise men. The original settlers of the Carolinas were a grand, chivalrous people ; the climate emasculated them. The climate of Southern California fascinates a visitor, but a New England family removing to Santa Barbara undergoes a curious deterioration. The children learn less and less at school, and the adults gradually lose their interest in ideas and the larger movements of the world, and fall into that personal gossip characteristic of Southern peoples.

To our ritual we might add the following collect: "We thank thee, O Lord, for our rugged climate. We thank thee that our forefathers were led in thy good providence to the

coast of New England, where the severe climate compels a sturdy, vital manhood, and not to Southern regions, where the climate indulges and pampers, till the faculties fall asleep. We thank thee for trials and struggles, without which we should ever remain idle children."

A POPULAR FALLACY.

To illustrate the influence of a cold climate and of certain popular fallacies, let me suppose that a winter storm, peering through a window up in New Hampshire, discovers a consumptive clinging to a stove, making remarks about this "detestable climate," and wishing himself in Florida. He tries a ride, is chilled, returns to the stove, adds spirited strictures on this "infamous climate," and longs for Florida. Seeking fresh air and exercise, he goes out to walk. Slipping, sliding, wheezing, coughing, he crawls back to the stove, berates this "hideous climate," and yearns for the South. Dying for fresh air he opens a window, catches a cold, in hoarse whisper calls down imprecations on this "fiendish climate;" and devoutly prays for Southern California. His case is desperate,

calling for sympathy and help, unless he is mistaken. That he is mistaken I am confident. What he needs is not a new climate, but new ideas.

Give New England the climate of Southern California, and she would soon begin to lose her most precious treasures—her patience, prudence, forecast, industry, perseverance, strength, and endurance—in brief, her exceptional vitality. Our summers are hot and exhausting: it is the cold season that gives to the people of the North their characteristic force. Every medical man will assure you that whatever tends to invigorate is good for the consumptive, and whatever tends to enervate is bad for him. It would seem wrong to remove a weak person from an invigorating to an enervating climate. This thought and much observation led doctors to send their exhausted patients to winter in Minnesota. Of late they are divided between warm and cold climates.

COLD CLIMATES BEST EVEN FOR INVALIDS.

I have no doubt that in genuine consumption the Northern climate is a good one. I

am sure it is better than that of Southern California. Though, if the choice be between life in stove or furnace heat here, and life in the shade of a pepper tree there, the pepper tree shade is the better. But if the choice be between the sweet air of open grate fires, and, dressed in abundant flannels, much life in the saddle in all weathers ;—if the choice be between these here and a winter in Southern California, I urge the patient to remain in New Hampshire. The money required for a journey across the continent will fit up his sitting-room with open grate and furnish it with wood or coal. The money required to pay for board away from home will supply a saddle horse and the extra thicknesses of woollen garments for the legs and feet. Commencing with an hour a day on a walk, the patient will soon spend five or six hours a day in the saddle. His pulse at the beginning is, say, 100 ; within a month it will fall below 80. Here is a strong impulse towards recovery. Twenty years' observation among consumptives in New England, and three years among consumptives seeking restoration in California, confirm these statements.

OUR RICH INHERITANCE.

The inhabitant of the tropics is the son of a rich man. He has no occasion to use his faculties, and they sleep. The inhabitant of the arctic regions is the son of a very poor man, and is compelled to struggle for existence. The inhabitant of the temperate zone is the son of a man who has enough to give his offspring every opportunity, on condition of stout and persistent effort. From the bracing northern regions come the great thinkers of two continents.

Gentlemen, I congratulate you on the climatic conditions under which your education is being pursued.

VENTILATION.

STRANGE SUICIDE BY CARBONIC-ACID GAS.

A young Frenchman, M. Deal, finding his hopes of cutting a figure in the world rather dubious, resolved to commit suicide, and, that he might not leave the world without producing a sensation, resolved to kill himself with

carbonic acid. So, shutting himself in a close room, he succeeded in his purpose, leaving to the world the following account, which was found near his dead body the next morning :

“ I have thought it useful in the interest of science to make known the effects of charcoal upon man. I place a lamp, a candle, and a watch on my table, and commence the ceremony.

“ It is a quarter past ten ; I have just lighted the stove ; the charcoal burns feebly.

“ Twenty minutes past ten ; the pulse is calm, and beats at its usual rate.

“ Thirty minutes past ten ; a thick vapor gradually fills the room ; the candle is nearly extinguished ; I begin to feel a violent headache ; my eyes fill with tears ; I feel a general sense of discomfort ; the pulse is agitated.

“ Forty minutes past ten ; my candle has gone out ; the lamp still burns ; the veins at my temple throb as if they would burst ; I feel very sleepy ; I suffer horribly in the stomach ; my pulse is at eighty.

“ Fifty minutes past ten ; I am almost stifled ; strange ideas assail me. . . . I can scarce-

ly breathe. . . . I shall not go far. . . . There are symptoms of madness. . . .

“ Sixty minutes past ten ; I can scarcely write. . . . My sight is troubled. . . . My lamp is going out. . . . I did not think it would be such agony to die. . . . *Ten.* . . . ”

Here followed some quite illegible characters. Life had ebbed. On the following morning he was found on the floor.

LET US WATCH THE SUICIDE'S FACE.

If we could have looked through the window and studied this strange performance, we should have seen the following stages :

First stage : Reddened face and bloodshot eyes.

Second stage : Deeper redness of face, expression of stupor, bulging red eyes.

Third stage : Turgid, purple face ; eyes protruding, fixed, and staring ; involuntary movements of the limbs.

Fourth stage : Victim lies on the floor ; convulsive crampings, face drawn down into the bosom, foaming at the mouth, features distorted, labored breathing.

Fifth stage : Death.

THE BLACK HOLE AT CALCUTTA.

If we could have gazed through that little window upon the struggles of the wretched victims of the Black Hole at Calcutta, we should have witnessed the same stages of poisoning, produced by the same kind of gas, as in the case of the suicide; but, instead of coming from burning charcoal, the carbonic-acid gas came from the lungs of the men. After pure air is taken into the lungs it leaves them mixed with a certain percentage of carbonic-acid gas. If the same air be taken into the lungs again, it becomes poisonous.

THE MAN IN THE HOGSHEAD.

Suppose a man were condemned to death by poisoning with carbonic-acid gas from his own lungs, a simple method would be to put him in a tight hogshead. If a small pane of glass in the side of the hogshead permitted us to watch the man's face, we should witness the same results as those caused by burning charcoal. Death would be caused not only from the same kind of gas the Frenchman used, but all the details would also be the same.

The gas from charcoal is not quite the same as the emanations from the body, but the effects are the same.

SMALL BEDROOMS AND SITTING-ROOMS.

The *first stage* of this poisoning, as described in the tragedy of the Frenchman, may be seen in every house where two persons sleep in a small bedroom with closed windows. It is a familiar remark among such persons that they feel worse on rising than when they went to bed. If you look into their faces in the morning you will discover the reddened face and bloodshot eyes, the first stage of poisoning with carbonic-acid gas.

In sitting-rooms heated by a stove you may observe, after the door has been closed for awhile, a modified form of this first stage of poisoning. None but those who have given careful attention to their physical and mental condition can appreciate the value of an open fire. If I were about to build a house, and were called upon to make a statement of the prime conditions of comfort and health, I should write down, first, if living in this climate :

“An open fire is number one among house blessings.”

By this means not only is a large volume of

air constantly passing up the chimney, changing the atmosphere of the room rapidly, but the air is also taken from the lowest and coldest stratum. Thus the cold air is drawn out, and the warm air brought down. The importance, to a student, of an open grate, or an open stove like the old Franklin stove, or some other means of making the air pass rapidly up the chimney, drawing from the stratum nearest the floor, can hardly be exaggerated. If a stove or furnace be the means employed to warm your study, you will find a window opened, a small crack at the bottom and another at the top, indispensable to thorough ventilation.

CHURCHES AND THEATRES.

It is improbable that we shall ever secure adequate ventilation of large audience rooms, like theatres and churches, without the employment of steam fans. Several large audience rooms are triumphantly ventilated by this means. The cost of the plant is not very large, while the expense of running a fan fully competent to meet the wants of 2000 persons

is not more than two or three dollars an hour. Among these persons it would not be difficult to find some hundreds, each one of whom would be willing to pay the entire expense for the relief which such ventilation would give. The managers of theatres have no idea how large a number of persons stay away because of imperfect ventilation. The whole subject of ventilation is one beginning to interest intelligent people, and must ere long receive at the hands of architects a practical recognition too long delayed.

NIGHT AIR.

“Beware of night air!” This is one of Aunt Susan’s solemn speeches. “Close your windows when the sun goes down.” This is another.

The other night, when she was drawling out the first of these favorite saws, I said to her :

“My dear aunt, what can a man breathe at night, if he don’t breathe night air? He can’t breathe day air, can he? Do you mean he should get a house full of day air, shut it up tight, and breathe it over and over all night?

My dear aunty, did you ever go into a bedroom where two persons had slept with closed windows? Now, aunty, you have a sharp nose; what do you think of that sort of air to feed the blood and brain? A great many people suck in that poison all night, and next morning suffer from dulness and headache. Aunty, did you ever sleep out of doors?"

"Never, and I should expect to wake up dead if I did."

"My dear aunt, the young birds, lambs, fawns, and all the rest of the tender, delicate young creatures sleep out, and do nicely; but they soon die of consumption if we bring them into our furnace or stove heat. Why, aunty, I saw when in Southern California a family of parents and five children living under a live oak tree, where they had stayed three years with no other cover than the tree, not even a tent. It was an intelligent New England family; they left Massachusetts wretched from scrofula. When I saw them they were in fine health. I believe a great French author when he says:

"'You may eat bad food, wear bad cloth-

ing, and never wash yourself; but if you breathe pure air day and night you will never suffer from scrofula. Impure air is the sole cause of scrofula.'

"Aunt Susan, I believe this is true. If you live out on the open plains, in an ocean of pure air, you may eat hot saleratus biscuit and fried salt pork, and never have scrofula or consumption."

Aunt Susan ended the discussion by saying:

"Sleep out in the street if you wish to; I prefer a good bed in a nice room. Sleep with the pigs or the cows if you like it; I prefer to sleep like a Christian."

Aunt Susan is partly right. It is better to sleep in a good bed than out in the street, or with the pigs. But it is a sad blunder to sleep without an open window.

SLEEP.

HOW THIN YOU LOOK!

Here comes a young man of twenty, who looks as though he were thirty. The old look comes from the clinging of his skin to the

bones. See how hollow his temples and cheeks are! He says:

"Doctor, what can be done for these bare bones? I hardly make a shadow; and while I ought to be plump at twenty, here I look like a grandfather. I am perfectly well and strong, but such a skeleton."

"Let me question you a little. What time do you go to bed?"

"Generally about eleven or half-past eleven."

"I thought so; this must be changed. Instead of going to bed at half-past eleven, if you are in earnest about covering your bones you must go to bed at half-past eight or nine o'clock."

SOMETHING TO TAKE.

A young woman thin and pale came to me with a very sorrowful face about her "skin and bones." She began with,

"Can anything be done for me? what can I take for it? I should be willing to take one hundred bottles of the worst stuff in the world, if I could only get some fat on these bones."

"Would you be willing to go to the Cliff Springs in Arkansas?"

"I would start to-morrow."

"But the waters are very bad to drink;" I said.

"I don't care how bad they are, I know I can drink them."

"I asked you whether you were willing to go to the Arkansas Springs, to test the strength of your purpose. It is not necessary to leave your home. Nine thin people in ten can become reasonably plump without such a sacrifice."

"Why, Doctor, I am delighted to hear it, but I suppose I must take a lot of some awful bitter stuff."

"Yes, it is a bitter dose, and has to be taken every night."

"I don't care, I would take it if it was ten times as bad. What is it? What is the name of it?"

"The technical name of the stuff is 'Bedibus Nine-o'clockibus.'"

"Why, Doctor, what an awful name! I am sure I shall never be able to speak it. Is there no common English word for it?"

"Yes, the English of it is, 'You must be in

bed every night at nine o'clock.' We doctors prescribe in Latin. *Bedibus Nine-o'clockibus* is the Latin for 'You must be in bed every night at nine o'clock.' "

"Oh, that is dreadful! I thought it was something I could *take*."

"It is; you must *take* your bed every night before the clock strikes nine."

"No, but what I thought was that you would give me something in a bottle to *take*."

"Of course I knew very well what you thought. That's the way with all of you. One person eats enormously of rich food till his stomach and liver refuse to budge; then he cries out,

"'O Doctor, what can I *take*? I must *take* something.'

"Another fills his system with tobacco until his nerves are ruined; then he exclaims,

"'O Doctor, what shall I *take*?' "

"I write a prescription for him—*Quitibus Chawibus et Smokibus*.

"I will suppose my patient is not a classical scholar, as I am sure my reader is, and so I translate for him. He cries out at once,

“ ‘O Doctor, I thought you would give me something to *take!* What *shall* I *take?* ’

“ Now, madam, you are distressed because a particular friend has been looking at your skin and bones.”

“ But, Doctor, you are entirely mis—”

“ Oh, well, we’ll say nothing about him then. But tell me, what time do you go to bed ?”

“ Generally about twelve o’clock.”

“ Yes, I thought so. Now if you will go to bed every night for six months at nine o’clock, without making any other change in your habits, you will gain ten pounds in weight, and look five years younger. Your skin will become fresh, and your spirits greatly improved.”

LATE HOURS AT COLLEGE.

Gentlemen, the social attractions of college life are full of danger. Permit me to prescribe for you, and I can do it the more easily because of your familiarity with Latin. My prescription for you is “ *Bedibus Nine-o’clockibus.*”

Few students can believe how much their progress and their equipment for the business

of life would be enhanced by the habit of retiring at nine o'clock.

A deal of sophistry is afloat on this subject. Successful statesmen and *litterateurs* who keep late hours are brought forward. Against all this I would place the thin forms and nervousness of the young men and women of America who sit up till midnight; and more than this, the deep and settled wisdom of the ages. I will not weary you with quotations from eminent men, literary workers, to the effect that health and good brain work turn upon early sleep. I might quote many to this effect.

“Should one sleep in a warm room?”

The temperature is not so essential as the purity of the air. A warm room, well ventilated, is better than one of low temperature whose air is not changed. I have seen country bedrooms hermetically sealed from one end of the winter to the other, and in summer many persons prefer to breathe again and again the refuse air in which the vital elements are largely exhausted, rather than risk the terrors of “night air.”

Fresh, well-aired garments worn next the

person are of the utmost importance to good healthful sleep. Never keep on the same flannels or other undergarments at night which you have worn during the day.

I know some housekeepers whose imagination runs to pillows, feather monsters, richly decorated with embroidery and lace. You are not likely to find such a bed in your college life, but if you do, strip off the pillows with their finery and put your head on a cool bolster—hair if possible—so low as not to impede the free circulation of blood in the neck.

NAP AT NOON.

“Do you approve of a nap in the daytime?” There are delicate, nervous organizations for whom a period of wakefulness from five or six in the morning till nine or ten at night is too great a strain. A few minutes of sleep in the middle of the day helps such persons, and prevents the feeling of lassitude which is apt to make a summer afternoon a weariness.

PURIFY THE BED.

Of the five pounds which a man eats and drinks in a day, it is thought that not less than

two pounds leave the body through the skin. And of these two pounds a considerable part escapes during the night. All parts of the bed—mattress, blankets, as well as sheets,—soon become foul, and need purification. As there is no other way of cleansing a mattress but by steaming or picking it to pieces, I think that the old-fashioned straw bed which can be renewed every month or two is the sweetest of beds. If now the bed covering is frequently washed, and the bed is left to air with open windows during the day, it will add to the sweetness of your sleep and the general tone of health.

FOOD.

OUR RESERVOIR.

Sitting one evening near a reservoir, on the brow of a hill from which the German town below received its supply of water, my companion, a physician, told me this story :

“About twenty years ago I was called early one morning, in great haste, to visit a family at

whose house I had spent the previous evening. The messenger exclaimed, 'O Doctor, come quick, they are all vomiting themselves to death.' I jumped into my clothes, seized my stomach-pump, and ran. Doctors were flying in all directions. We cried out to each other, 'Poison! poison!' and rushed on. Then followed the wildest excitement I ever witnessed. Every one had the same symptoms—vomiting, retching, burning thirst and pain.

"At ten o'clock the Amtmann called a few of us together for a moment's consultation. I had the honor to suggest that the poison must be in the water.

"We ran up here, and right there, just under that tree, we caught a glimpse of a large paper package, and plunging in my hand, I hauled out more than ten pounds of the deadly poison, still undissolved."

The stomach is the reservoir from which every part of the body receives its supplies.

OBSERVE THOSE PEOPLE.

Let us look out at this window. Do you see that red nose? That redness is produced

by a poison which comes from the man's reservoir.

Notice that lady with the eruption. The poison causing that comes from her stomach or reservoir.

There, that portly gentleman with a limp has a big toe which is too big. I know him well. He insists that the moon is responsible for his gout, as his bad attacks come on at the full of the moon. I tell him that the reservoir from which the poison in his toe comes is somewhat like the moon in shape, and so he may not be so wide of the truth after all.

But look at that fellow ! Did you ever see such a doleful face ? He has the blues fearfully, wishes himself dead a hundred times a day. His brain receives its supplies from his stomach. And his dyspeptic stomach furnishes not sweet, healthy chyme, but acids and poisonous gases. Of course his brain gets poison instead of food. His face tells the story.

If we were to stand here and see a hundred people pass, we should be able to determine the condition of each of their reservoirs.

Ah ! there's a good one ! What a fine skin !

What a bright eye! What an elastic step! That young man's reservoir supplies nourishment.

It cannot be repeated too often that the stomach is the fountain which supplies every part of the body. If the stomach is sick, the brain, heart, lungs, liver, bowels, kidneys, and spine are all sick. The trouble may all be felt in one spot; it may be in the stomach itself, or it may be in the brain, or in a rheumatic muscle. It will be felt in the weakest place. Every link in the chain bears the same strain; only the weakest gives way.

CHOICE OF FOODS.

WHAT "THEY SAY."

"Look at those wretched, gaunt, dietetic lunatics, forever harping on their food. They have all got the dyspepsia, and you never hear them laugh. It is only those who eat and drink anything and everything that have a good time." This is what "they say."

Those who think it important to discriminate in the choice of food need not be frightened

because "high livers" squirm. A man who would train a fine horse, and should hold the notion that it made no difference what or how or when he ate, we should think an idiot. But the range of a horse's food is limited and the choice easily made; while man, who has ransacked the earth, the sea, and the very heavens for foods, and tortured his brains for tricks of cookery, has a dietary from which it is a hundredfold more difficult to select. It requires intelligence to determine the best food even for a steam boiler. And yet epicures pretend that it makes no difference what foods we use for our vital boilers, if only the palate is tickled.

A NEGLECTED MINE.

Of all neglected mines of wealth no other holds more precious treasures than the science of food. From food come our bones, muscles, brains. Some peoples in Europe and Asia have remained undeveloped for lack of good food.

Already we have more than a hint that our foods may be so selected as to contribute directly to a particular part or function, and in

this we hear the voice of prophecy, that ere long physiological chemistry will select the dietary contributing most directly and effectively to any desired end.

An unvitiated taste would be a perfect guide, but this sense is not often in a natural condition, and therefore the child's passion for pie, cake, and sweetmeats is no proof that these things are its best foods ; nor is the preference for hot griddle cakes and biscuit, pies, hot puddings, sausage, coffee and tea, a proof that these are the best foods for adults. No one presumes to argue that such likings are reliable guides in the selection of our food.

QUANTITY OF FOOD.

SIR FRANCIS EXPLAINS.

Sir Francis Head, describing the gorging habits of those who visit the German brunns or springs, says :

“ Nothing which this world affords could induce me to feed in this gross manner. The pig would have some excuse, but it is shocking to see any other animal overpowering himself

with such a mixture and superabundance of food."

On another page he returns to the subject and quaintly remarks that "almost every human malady is either by highways or byways connected with the stomach; and I must own I never see a fashionable physician mysteriously counting the pulse of a plethoric patient, or, with a silver spoon on his tongue, importantly looking down his red inflamed gullet, but I feel a desire to exclaim, 'Why not tell the poor man at once, "Sir, you've eaten too much, you've drunk too much, and you've not taken exercise enough" !'

"That these are the main causes of illness there can be no greater proof than that those savage nations which live actively and temperately have only one great disorder—death. The human frame was not created imperfect; it is we ourselves who have made it so. No donkey is so overladen as our stomachs, and it is because they groan under the weight so cruelly imposed upon them that we see people going in herds to drink at one little brunnen."

PROF. CALDWELL SPEAKS.

Professor Caldwell, of Transylvania University, in one of his vigorous and instructive essays, inveighs eloquently against the intemperance of his countrymen in eating as well as in drinking. He tells them that one American consumes as much food as two Highlanders, although the latter are amongst the stoutest of the race. "Intemperate eating," says he, "is perhaps our most universal fault. We are all guilty of it, not occasionally, but habitually, and almost uniformly, from the cradle to the grave. It is the bane alike of our infancy and youth, our maturity and age. It is infinitely more common than intemperance in drinking, and the aggregate of the mischief is greater. For every reeling drunkard that disgraces our country it contains one hundred gluttons—persons, I mean, who eat to excess and suffer by the practice." "How, indeed," he afterwards exclaims, "can the case be otherwise while children and youth are regularly taught, hired, bribed, or tempted, to over-eat themselves from their birth?"

NAUGHTY STOMACHS.

“The stomach and bowels, in fact,” Professor Caldwell goes on to say, “are regarded very much as if they were independent powers residing within us, and placed there purposely for our molestation. Many heavy charges are brought against them. They are blamed for every act of mischief which cannot be clearly proved against another organ; and yet, influential as they are, they are treated by us with very little care or ceremony. Their powers and wishes are consulted in nothing, but their backs are loaded at the caprice of their owners, worse, as Sir Francis Head observes, than any pack-horse; nevertheless we abuse them most emphatically when they sink overwhelmed. They are, in short, the scapegoats which must bear all our physiological delinquencies, and save us the pain of blaming ourselves. If they feel uneasy after a heavy meal it is not *we* who are to blame for having eaten it. No, it is the fish which lies heavy on the stomach, or the stomach which is unfortunately at war with soup or some other well-relished article. We have

nothing to do with the mischief except as meek and resigned sufferers. We never eat more than enough. We never devour lobsters or salmon or cheese, or anything which experience has told us our stomachs cannot digest. We are too prudent and self-denying for that. And yet, somehow, our stomachs get hold of these things in spite of us, and we must pay the same penalty as if we had eaten them deliberately and with malice prepense. The case is hard, no doubt, that we cannot lead indolent and slothful lives and enjoy the digestion of a tiger ; but since we are so unfortunately constituted that we must act like rational creatures, or suffer the penalty, would it not be wise to set a better watch on the stomach, and try to subject it to control?

IMPORTANT EXPLANATION.

“According to this law of adaptation, which of course has its limits, the stomach may be accustomed to the reception of either a larger or a smaller quantity of food than the system requires. If it is accustomed to too much, and less than usual be allowed, an unpleasant feel-

ing of vacuity will arise, accompanied by a craving for more ; but after a few days the unpleasant sensation will disappear, and the feeling of satisfaction be as great as if a full meal had been taken, and digestion will become more healthy and vigorous. Whereas, if more food continues to be taken than the system requires, merely to gratify the temporary craving, ultimate bad health will be the inevitable result."

A HAPPY CONVERSION.

Large eaters are almost always wanting in mental activity and physical endurance. I used to know a good man who tried hard to be a Christian, but failed because of too much dinner. This man was a curiosity. He superintended a small wood-turning establishment, sitting in the office constantly, except when eating, which was four times a day. When he consulted me about his "poor stomach," and I told him he was a pig, he said,

"Why, Doctor, you are mistaken. I am faint half the time, and eat an extra meal to keep up my strength and relieve my faintness."

I went at him with fact and physiology. At length he was convinced, and promised to follow my prescription :

“ Breakfast at seven o'clock upon a piece of boiled beef half as large as your hand, a slice of bread, a baked potato, with no drink. Dine at two upon a piece of boiled or steamed beef or mutton as large as your hand, with bread, potatoes, and other vegetables at pleasure ; no dessert. Take no supper, and go to bed early.”

In fifteen days his faintness had disappeared, and he was rapidly recovering. To-day he is a healthy, active man, and a warm advocate of two moderate meals a day. Temperate people rarely feel their stomachs—forget they have stomachs ; while these enormous eaters are always hungry, or faint, or bloated, or troubled with eructations, or acidity, or diarrhœa, or some other symptom showing a morbid state of the digestive apparatus.

All the very strong or active men with whom I have been acquainted have been moderate eaters. The physiology of this fact is, that it takes a large amount of nerve force to digest food, and with these prodigious eaters so much

of the nerve force goes to the stomach that little is left for brain and muscle.

BUSINESS OF GRINDING GRISTS.

Persons having a good stomach to begin with, can, by long practice, learn to digest an enormous quantity of food. If they give their whole force and vitality to this business of grinding grists they can, in the course of even a short life, grind immense quantities. But, as a steady and regular and only occupation it is hardly consonant with the loftiest ambition, and so I advise another policy. That other policy is to find out how much food is needed to run the machine, what and how much fuel will keep the steam at the best working point, and never pass these bounds.

EXPERIMENT ON MYSELF.

I was astonished at an experiment on my own person. For years I had eaten three hearty meals a day. At length upon a careful consideration of the physiology of digestion, I found I was probably using too much of my force in that function. I reduced to two meals a day, and to about one half the quantity of

food I had been using. I can't tell you what mental and bodily freedom I experienced.

I know men with large heads and vigorous bodies, who consume so much of their nerve force in digestion that they have nothing left with which to achieve the triumphs of life.

HOW MUCH SHALL I EAT?

How much shall I eat? I can't answer that question. You must determine for yourself.

"Can't you help me? Can't you give me some test or rule by which I may arrive at the true answer?"

Possibly. Perhaps I shall serve you best by giving you a little of my own experience. For a long time I was in doubt about this matter of quantity. I had tried the rule of Drs. Philip and Paris, which is that "one must attend to the first feeling of satiety." I had likewise followed Dr. Hitchcock's rule, to eat of only one course. I had read with interest the advice of the celebrated Dr. Johnson, which is that every one must observe after dinner, and if he find from his sensations that he has eaten too much, he must not do it again.

All these opinions and teachings were interesting, but they did not help me just where I needed help. I knew very well that as a habit I ate too much. I never had any difficulty in taking to the table the best resolutions, but when I began, the food tasted so good and the company was so pleasant, that I forgot, and went on with one delicious course after another, till I ate twice as much as I could well digest.

CAPITAL IDEA.

On sitting down at the table take on your plate all that you are to eat, and when that is finished, stop.

This is the only rule which has ever helped me. Fixing the mind on a definite point, it is easy to adhere to it. In this way you avoid desserts, and likewise the variety which so tempts us on. I have known many persons to try this rule, and so far as I can now recall not one of them has failed. At home it is easy to manage, and away from home it does not excite observation. The beef, bread, potato, squash, and turnip all come at once, and when you have done with these you have eaten enough.

POOR LITTLE SAM.

When I was a boy my sympathies were awakened by what I thought the cruel starving of the calves. They were fed only twice a day, morning and evening. Eating all day myself, I thought it very cruel to tie up these poor, helpless things, and give them no food or drink from morning till night.

Each of my brothers had a calf, my sister had a calf, and I had a calf. The others were satisfied with John's assurance that twice a day was enough. I knew better, and made such a fuss about their starving my poor little Sam, that the "powers that be," ordained that the feeding in the case of young Samuel should be as his owner directed. Upon the proclamation of this ukase I determined to show 'em what's what, and to make sure I fed Samuel myself, and gave him all he wanted once in two hours.

At the end of six weeks how the rest of 'em did crow over me. It was true, as they said, that at the beginning of my sausage-stuffing system, as they called it, Samuel was the biggest calf in the lot, but at the end of six weeks

“what a fall was there, my countrymen.” Even my smallest brother’s little Fan could give Samuel odds. To cap the climax, when we untied and turned them all out together, little spotted Fan went at my Sam, upon whom my hopes had centred as the bully of the yard, and walloped him in no time. For a long time they wouldn’t stop plaguing me about that good-for-nothing calf. My little sister asked me one morning at the breakfast table, “How’s ‘e p’ophet Sam’el ’is mornin’?”

From that day to this I have never advocated the frequent feeding of calves. They do best on two meals a day, and now I have no doubt that some other calves I wot of would do vastly better on two meals a day.

BUT YOU MUST NOT STARVE.

On the other hand many dyspeptics have completed the ruin of their stomachs by starvation. They learn that for the time being abstinence affords relief, and conclude that in this they will find a cure. But after a while they learn to their sorrow that the stomach, with almost nothing to do, accommodates itself to this

nothing, and loses the power of digestion. An intelligent friend told me :

“About a year ago I began to suffer from heartburn and constipation. A friend advised me to go without supper, and take only a small quantity of bread and baked apples for breakfast and dinner. At first I was delighted with the change. All my nervousness and low spirits passed away, and I thought I had discovered an important secret. After a time I found that even the small quantity I had been eating was too much, and reduced it still further. Within three or four months my stomach and whole body became so weak that I found the least increase in the quantity of food, or any unusual exercise, produced faintness and distress. Within a year I have lost more than thirty pounds of flesh, and my stomach is now so weak that an extra swallow of water, ounce of bread, or an extra baked apple, causes much suffering.”

This person being young will recover, but through much suffering. I recommended the moderate use of meat, and a gradual increase in the quantity and strength of nutriment.

The tone of the stomach, like the tone of the muscles, may be lost by lack of exercise. While it is the common thing to find dyspepsia produced by excessive and injudicious eating, occasionally we meet cases of indigestion produced by starvation.

FAT FOLKS.

Perhaps you fancy your shape. You do look jolly, but obesity, like emaciation, is a sort of disease, unfavorable to health and long life. One of your sort said to me the other day, "I would give ten thousand dollars to get down to 150 pounds. What can you do for me? My family doctor thinks he can give something to whittle me down."

I said: "Suppose you had a horse as fat you are, and some doctor should prescribe medicine for *him*; what would you say?"

"I should say that I could take off his fat without medicine."

"How?"

"Less food, more work."

"Go thou and do likewise. Reduce the quantity of your food one quarter, exercise much, and in a month you will lose five to ten

pounds. Then reduce another quarter, and increase your exercise. Within six months you will lose twenty to forty pounds, and your digestion will be better, your respiration freer, you will be more active, healthy and happy."

"But," he exclaimed, "I can't go hungry and faint forever."

"That shows you have never tried it. It is only the great eater who is troubled with hunger and goneness. If you should reduce the quantity of your food one half at once, after a week you will not suffer from faintness or hunger. A man who eats temperately rarely feels the sensation of hunger. Girls swallow acids and chalk, men smoke and chew tobacco till they become peregrinating stench-pots, all to reduce flesh."

My dear waddlers rise early, exercise much in the open air; bathe frequently, rub the skin *very hard*; eat plain, coarse food, and reduce the quantity until, with much exercise, you find yourself growing thinner two or three pounds a week. Your sluggishness and short breath will leave, and you will become cheerful, active, and hardy.

LEAN FOLKS.

Americans incline to emaciation. A thin Yankee worries and asks what he shall do. First, be thankful you are not fat. Man's body is for use. Lean, flexible folks should be grateful that they do not waddle and wheeze. Besides, your chance for long life is better than a fat man's. But you need a certain quantity of fat, and I will prescribe for you. You probably eat too much, and hurt your digestion. It is not food swallowed, but food well digested that produces flesh. If your digestion is shaky shun pie, cake, pudding, sweetmeats, all desserts, and confine yourself to beef and mutton, with graham bread, potatoes, and other vegetables, eating of plain food less than your usual quantity. Now you must observe and eat more or less as your case may require. *It is very important that you should masticate your food thoroughly!* Live in the open air much, for after the food is dissolved in the stomach, it must mingle with much oxygen in the lungs before it becomes a part of your body. Bad

food with pure air will make good flesh faster than good food with impure air. On rising and on going to bed slap your stomach and bowels hard several minutes with the flats of your hands. Shun tea. Sleep fattens ; so retire early, and don't hurry up in the morning. Our friend the waddler ought to sleep little, you much. A good prescription for him is :

“Keep your *eyes* open, and your *mouth* shut ;” while a good one for you is :

“Keep your *mouth* open, and your *eyes* shut.”

A CHAT ABOUT GOOD FOOD.

John Stebbins, a carpenter, earns three dollars a day. At his modest home you may find a bright little woman with four pretty children. John is a brave fellow and generally contented.

Last autumn he was at work upon a high building when the scaffold gave way. His companion was killed, but John caught on the eave-trough and hung there till they rescued him. Ever since then he has been worrying about life insurance. He dropped in to see me the other day, and, recurring to the subject, declared :

"I will get a policy of two thousand dollars if I have to work nights for it. Suppose I had gone up with poor Ned, what would have become of Jenny and the little ones?"

"John Stebbins, I am at liberty now, and will devote an hour to telling you how to get rich. Is your wife a good cook?"

"Tiptop, sir. Her mother was the best cook in town."

"Yes, I know about these *best* cooks. When I hear that a woman is the *best* cook in town I am sure she is the *worst*. What do you eat at your house? What did you have for breakfast this morning?"

"We had beefsteak, baked potatoes, buckwheat cakes, bread and butter and coffee."

"White bread?"

"Yes; I always get the best."

"How about your dinner?"

"We had a small roast of beef, potatoes, turnips, squash, bread and butter, and a bit of pie."

"What will you have for supper?"

"Can't say; but last night our supper was hot biscuit and butter, with some peach pre-

serves and a cup of tea. We always take a light supper."

"How much money do you save?"

"Not a dollar. I had four hundred dollars when we were married, but to-day not a pica-yune!"

"How much do you receive for your work?"

"About nine hundred dollars a year."

"How much do you think rent, fuel, gas and clothing cost you?"

"I know all about it. They cost me three hundred and seventy-five dollars; that leaves five hundred and twenty-five for the table, and I tell you with six of us it's a tight squeeze."

"John, the clothing, rent, gas and fuel are reasonable, but the table expenses may be reduced."

"It can't be done. We must have something to eat."

"If I tell you how to feed yourself and family for two hundred dollars a year better than you are now fed for five hundred and twenty-five, will you try it?"

"Of course you're joking."

"Not a bit of it. I will tell you how to live

better than you are now living ; your teeth will be whiter, your breath sweeter, your strength more enduring, your bodies plumper, and your spirits better, for less than two hundred dollars per year ; so that you will save, say, three hundred and fifty, be able to take out your insurance policy, and have two hundred a year to spare. In brief, it will make you a rich man. I will tell you how this may be done. I have lived in this way, not because it is economical, but I like it.

“ White bread, butter and sugar are common articles of food on American tables. They are poor trash, furnishing almost nothing for brain, muscle, or bone.

“ Oatmeal, cracked wheat and corn are not common. They are strong foods, and furnish abundant nutriment for brain, muscle and bone.

“ Weight and strength obtained from white bread, butter and sugar cost ten times as much as when obtained from oatmeal, cracked wheat and corn.

“ Wheat, oats and corn, cracked, boiled, and eaten with syrup or milk, are palatable. They are strong foods and astonishingly cheap. I ate

for breakfast this morning oatmeal with about a gill of milk. Capital breakfast, and it cost about two cents. For dinner I ate about three cents' worth of beef shank in a stew, with bits of bread, and closed the meal with a dish of white Southern corn seasoned with syrup. The cost of the meal, saying nothing of the cooking, was not more than four cents. As I never eat anything after dinner the cost of my food for the day is six cents.

A GOOD STYLE OF FRENCH COOKING.

“A Frenchman will take one pound of the toughest part of the neck of an ox, worth five cents, and, adding three cents' worth of bread and condiments, will furnish a better dinner for three persons than an American can supply with roast beef, potatoes, bread, butter and pastry for fifteen times the money. I mean it will be more enjoyable, digestible and nutritious. One advantage of stewing meat, which has reference to the luxury of eating, is this: in the form of stew you can introduce at pleasure any of the delicious herbs prepared and sold in packages or tin boxes. As only choice

roasts and steaks are palatable, it is a great advantage to cook the meat in a way that permits an agreeable flavor to permeate every portion of it.

A SICK OX.

“Besides, most of the meat sold in our markets is in a half-diseased condition. The ox staggers out of the car, after a journey of a thousand miles, exhausted and sick; he soon finds his way to our tables. In the common form of rare roast or steak the flesh is not wholesome. Roasting or broiling leaves the meat in part unchanged. Stewing or steaming will neutralize even the poison of the genuine cattle disease.

“John Stebbins, let me whisper in your ear: What I am about to say, your neighbors must not hear, for they would sit up nights to criticise it. If you buy the unfashionable pieces of meat, cook them in the way I have hinted, eat fish occasionally, and make free use of oats, wheat, corn, beans and rice, seasoning with the juices of your meats, the first cost of food for your family will be less than one hundred dollars a year. And I promise you, as I said in

the beginning, that your teeth will be whiter, your breath sweeter, your strength more enduring, your bodies plumper, your spirits better, and you will be able to take out your insurance, and, in brief, become a rich man."

MASTICATION.

STARCH AND SUGAR.

It is of no use to say to a man after dinner, "Digest your food well," for he has no direct control over digestion below the mouth. But while the food is in the mouth it is entirely under his control, and he may do more with his teeth to secure good digestion than most people would think possible.

The human stomach cannot digest starch as starch, and yet a very large part of our food is starch. We all know how much starch there is in potatoes, bread, and other common foods. If a potato could reach the stomach without passing through the mouth, the stomach would find it rather unmanageable. But let it remain a few moments in the mouth, and be ground

into a paste, the starch will undergo a change which will render the subsequent steps in the digestive process easy. This change it will surprise some people who have not studied the subject to learn is from starch to a sort of sugar.

The saliva contains a remarkable ingredient known as *ptyaline*. It is about one two-hundredth part of the saliva. This ptyaline has the magical power of changing the starch into a digestible saccharine matter. Thus starchy foods are prepared for digestion.

Whoever has taken a mass of wheat into the mouth has experienced a pleasing illustration of this conversion of starch into sugar. When the wheat is first crushed in the mouth it has the starchy taste, but almost instantly becomes sweet. In this brief moment the saliva has effected the transformation.

TEETH RETIRED FROM BUSINESS.

Dining at a restaurant in Germany, I thought I heard my own language spoken by some one in the next stall. Rising, I asked, "Did I not hear some one speak English?"

"Oh, yes," replied a middle-aged gentleman.
"I speak English."

Having myself spoken German until I could hardly swallow, it was a great joy to converse in my own mother-tongue.

"Have you a thin skin?" he asked while we were dining.

"I don't understand you."

"Have you a thin skin? I mean are you sensitive to criticisms of your country or countrymen?"

"Not particularly sensitive if the truth be told."

"Then let me say that during my six years in America I saw nothing which surprised me more than the way your people eat. I really think it worth a large admission fee to see a hundred Yankees at dinner. Every one has something to eat in one hand and something to drink in the other. When the food hand goes up, the drink hand goes down, and when the food hand goes down, the drink hand goes up. It reminded me of one of those walking-beams on a steamboat. I think this gulping down your food is the reason that American

people are such dyspeptics. In an international exhibition of dyspeptics, your country could show finer specimens and more of them than all the rest of the world."

John Black eats breakfast in two minutes fifty seconds. I have seen him do it. Six buckwheat cakes, four inches of sausage, one large cup of coffee. Hands, jaws, lips, tongue, fairly fly, and what shall we say of his throat? Yet I wouldn't be afraid to wager that he can reduce the time five seconds, and do it in 2.45.

THE CREATOR'S PLAN.

The design of the Creator is that we should prepare our food for the stomach by grinding it to a paste, and saturating it with the juices of the mouth; and, as digestion is the pivotal function of the animal economy, and the only direct contribution we can make to it is in the mouth, the importance of thorough mastication can hardly be exaggerated.

A FUNNY GRAHAM CRACKER.

My old friend Dr. R—— used to say that one graham cracker eaten in his way gave more

pleasure than dining at Delmonico's. One day I said to him :

"Come, let me see you eat a cracker in *your* way." He brought the cracker, and took a seat in a comfortable chair.

"You may think this a very simple affair," said he, "but I am going to show you the best thing gleaned from my forty years' observation and thought about health."

"I am impatient to see you begin."

"Don't be in a hurry. People should not begin to eat in haste. Now, you must not laugh at me. All my life I have thought about health, and have reached the deliberate conclusion that the manner in which I am about to eat this cracker is the most important discovery I have made."

"You have said the same thing before. Pray when are you going to begin on that cracker?"

"Never, unless you let me begin in peace. A man can't eat by jerk."

I remained silent a moment ; he took a small bite, and went on chewing, chewing, chewing.

"You would like a little drink?"

"Never. I never drink while I am eating."

"I will see how long it takes you to eat one cracker," and I looked at my watch. Waiting until the cracker had disappeared, and finding the time six minutes, I said, "How do you like it?"

"Nothing sweeter ever entered my mouth."

AN INTERESTING FACT.

Then he added a fact which I have since learned is quite true, viz., that plain food like graham bread, cracked wheat, oatmeal cakes, is, when masticated thoroughly, most delicious. If one bolts his food it is pleasant to have condiments spread over the surface. The palate is tickled as the food slips down. But if one eats with deliberate mastication the plainest food is the sweetest. To realize the truth of this, try alternately a mouthful of bread and a mouthful of sponge cake. If you swallow with some liquid after a motion or two of the jaws the cake will be found the sweeter, but if you masticate well, one mouthful of good

bread gives more pleasure than ten of sponge cake.

This law holds good in more than one department of life. One hour of the quiet, gentle comfort and love of one's home well masticated and digested affords more real happiness than many hours of the glare and parade of fashionable parties.

ONE CAUSE OF YELLOW TEETH AND BAD
BREATH.

A dog fed upon the compounded, conditioned bits from our tables gets yellow teeth and bad breath. Human beings feeding on the same compounded, condimented foods get yellow teeth and bad breath. Both dogs and men, living in a simple, natural way, have white teeth and sweet breath. Cows living in a natural way retain their teeth sound and perfect, but fed on hot swill or slops their teeth blacken and decay. When investigating the swill-milk nuisance in the city of New York, *Harper's Weekly* pointed out the fact that cows fed on hot swill or slops lose their teeth and emit a horrible breath. Millions of hu-

man beings lose their teeth and health from the use of hot slops.

Few things in this little book are more important than the advice to eat dry food, with thorough mastication. The hot swash with which we deluge our stomachs harms the gastric-juice glands, dilutes the gastric juice, and weakens the digestion.

CHEWING GUM AND TOOTHPICKS.

I have met persons with defective salivary glands. These glands did not furnish an adequate quantity of fluid at their meals. Again, I have met persons whose saliva seemed to lack the needed proportion of ptyaline. Such persons have been greatly relieved by chewing a piece of gum for a half hour after each meal, swallowing the saliva. To several who had a prejudice against chewing gum I have suggested chewing a toothpick and swallowing the saliva. Persons with defective digestion may obtain relief by flooding the stomach with saliva after a meal. Any one suffering from acidity after a meal may obtain relief by this gum chewing. Let no one by this after-dinner

chewing try to make up for neglect of thorough mastication at meal time. I trust this bit of advice may not add to the vulgar habit of chewing gum so common among children.

HELPS TO DIGESTION.

REGULARITY IN EATING.

If there is one table law about which all persons are agreed, it is, that our meals should be taken at stated and regular periods. People may differ about vegetarianism, about sweets, about pies and cakes, about tea and coffee; but I have never met a person who would insist that *regularity* was of no consequence—that it was just as well to take two meals to-day and five to-morrow, to take dinner at one o'clock to-day, three to-morrow, and five next day. Without understanding the physiological law, all are agreed that regularity is important.

A long journey by rail does not derange the stomach because of sitting in an unventilated car, for the traveller may occupy a still worse place in the pursuit of his business at home;

neither is it because of the character of the food furnished at the railway lunch rooms, for the food at home is often worse ; but the stomach derangement which nearly always comes with the long railway trip is, in great part, to be traced to irregularity in the times of eating. In a recent trip, we took breakfast the first morning just after daylight, next morning at half-past nine o'clock, the next at seven, and so with the other meals ; only one day we had no dinner at all. When we reached San Francisco we were all suffering from indigestion ; some were conscious of no discomfort in the stomach, but not one of us escaped the dullness and depression of spirits which come of imperfect digestion. Among the table laws this one of regularity is pre-eminently important.

TABLE MANNERS.

Our manners at the table have much to do with our digestion. Politeness must be set down among the means conducive to a healthy stomach.

In the first place, if we offer the bread, the butter, and the sauce to others, we interrupt

the otherwise unbroken shovelling-in business, and thus make the eating more deliberate ; and in the second place, the temper induced by this mutual kindness is eminently favorable to the stomach functions. A kind action always tends towards health ; an unkind or mean one tends in the opposite direction. This is a general law, and especially applicable to table manners.

CONVERSATION AT THE TABLE.

A cheerful temper charms the stomach. Pleasant, social companions will help us to digest what might otherwise prove unmanageable. An Englishman, without observing the laws of exercise or sleep, will digest an enormous dinner and preserve his stomach because of his two hours of chat and good-fellowship. Let him eat the same quantity in the rapid restaurant fashion, sitting alone, and he would soon be a wretched dyspeptic. The influence of a quiet, social temper upon the stomach is one of the curious facts about digestion.

Blessed are the story-tellers, for they help us to digest our dinners. A good story-teller, if

his stories are clean, is a godsend. His best services are rendered at the table. Those of us who cannot tell a good story can bring to the table the funny papers.

SUNSHINE AND DIGESTION.

Very intimate relations exist between the sun and digestion. Digestion and assimilation become weak and imperfect if the man or animal is not freely exposed to the direct rays of the sun.

Mr. P., one of our merchants, came to see me about his stomach. Dyspepsia was written all over his face, was shown in his movements and heard in his voice. The conversation between us was about the following :

“ Doctor, if you will excuse a street vulgarity, I am ‘ played out.’ I can’t digest, I can’t work, I have lost my courage.”

“ Tell me about your diet.”

“ If you will excuse me, I have studied the subject, and know my food is all right.”

“ How about your exercise ?”

“ I have a little gymnasium in my store, and

exercise an hour every day. I sometimes tire myself out with these exercises."

"How about your sleep?"

"I go to bed every night with the chickens. At any rate I am always in bed by nine o'clock, and I rise by six in the morning, take a bath, a plain breakfast, and go to my counting-room. Once in the forenoon and once in the afternoon I exercise in my gymnasium half an hour or so, but I am getting worse and worse all the time. Isn't it curious? My wife thinks I must have a cancer in the stomach. Nothing seems to help me. I live the most physiological life, but my digestion grows worse and worse."

"About your counting-room; is that light? is it sunny?"

"No; that is our one nuisance. The store is every way pleasant, but the counting-room is so dark that we have to use gas nearly all the time."

"That's it, Mr. P., that explains your cancer."

"Of course you don't mean that; but I suppose it would be better if the counting-room was sunny."

"Mr. P., no plant or animal can digest in

the dark. Try it. Plant a potato in your cellar. See how slender and pale it grows. Now open a window in another part of the cellar and notice how the poor hungry thing will stretch that way. The process of digestion, the great function of assimilation, cannot go on without sunshine.

“Mr. P., did you ever notice where grain is growing in an orchard that the part under the trees is smaller than that outside and away from them? And yet the land is actually richer there.

“Have you never noticed that the only grapes that become perfectly ripe and sweet, the only peaches that take on those beautiful red cheeks and offer that luscious sweetness, are those on the outside, entirely uncovered by the leaves and exposed to the sun? God’s laws are the same in human life.

“Don’t you see a good many pale girls in your stores, Mr. P., girls with a bloodless, half-baked sort of face, whose walk, whose voice, whose whole expression is void of spirit and force? Those girls are in the green state. Look at their lips and cheeks: they are not

half ripe. Send them out in the country ; let them throw away their parasols and live out in the sunshine three months, and I would give more for one of them in any work requiring spirit than for a dozen of those pale things that live in the shade. The only girls with red cheeks and sweet breaths, the only girls who become fully ripe and sweet, are those who baptise themselves freely in sunshine.

“Mr. P., with your excellent habits, if you move your counting-room up-stairs, in front, and stand where the sun can have a fair chance at you, even though it is only three or four hours a day, you will be better in a week.”

DRINKS.

WHAT SHALL WE DRINK ?

Of all stomach questions this is the most difficult to answer. If coffee and other beverages were disagreeable, and we drank them as a duty, it would all be easy. Duty is weak, appetite strong. When you understand what is said in this little work on the physiology of mastication, you will hardly need any further

instruction as to drinks at the table. If your teeth are good, chew your food till it is ready for deglutition and digestion. Without this you miss the full pleasure of eating. The experience of Dr. R., described on another page, illustrates the "true inwardness" of eating. To bite a piece of bread in two or more pieces and wash it down with coffee or tea is to cheat the palate.

WATER.

You need considerable water in the system to run the machine. This may be taken on rising and on going to bed. If within a mile or two of a spring make it a visit in the early morning, and take one or more draughts of fresh water charged with electricity from the earth. To boil water is to lessen its physiological value. There is something magical in the influence of water fresh from a spring, drank on rising in the morning. Cold water morning and night is so stimulating to the alimentary canal that it relieves constipation.

MILK.

Milk is a bad drink for students. Those

who have studied the laws of digestion in the light of Beaumont's experiments know that a quantity of milk in the stomach must interfere with the digestion of solid food. Milk, even when taken with simple bread, will not leave the brain as clear as will dry food with abundant mastication.

TEA AND COFFEE.

Tea and coffee injure the brain of the student. The human brain no more needs the stimulus or narcotism of tea and coffee than does the brain of a deer or race-horse.

ALCOHOLIC DRINKS.

Turning to a vast throng of young men assembled in a magnificent coliseum, located in the region of imagination, let us consider alcoholic beverages.

Gentlemen, American college students, I ask five minutes of your time. Subject—alcohol. Is it a poison? We drop a little into a man's eye. It reddens and irritates it. The eye is not scratched; it is poisoned.

A living man with an opening through his side into his stomach presents himself for ex-

periment. It is the famous case of St. Martin. The eyes through which we look are trained ones. Beaumont was a keen observer. Gazing through that strange opening we see, when alcohol is introduced into the stomach, the same poisoning as in the eye. So strong was this Frenchman's stomach that on going to bed at night he could gorge himself with the most indigestible food, and the lining coat of his stomach would show no irritation the next morning. But when Beaumont gave him at night a glass of pure French wine, the lining coat of his stomach next morning showed a distinct irritation. After a glass of whiskey the veins were much swollen, and the irritation continued several hours.

And now we study the stomachs of drinking men after death. The moderate drinkers show a stomach resembling St. Martin's after the wine. The free drinkers discover a worse lining. Hard drinkers show a stomach dotted with dark ulcers. The stomach of the poor wretch who shrieks out his life in delirium tremens is a putrid-looking mass riddled with black destruction.

Those who say "No doubt alcohol is bad for the stomach, but moderately used it fires the brain and vitalizes the muscles," I refer to the remarkable work of Professor Carpenter the great physiologist. That miracle of condensed fact and argument won the prize offered by the British Parliament for the best essay on the influence of alcoholic beverages upon British sailors and soldiers. Dr. Carpenter leaves not one hook on which to hang an honest doubt that alcoholic beverages are always a curse to the sailor and the soldier.

Some one may exclaim, "I am not a British sailor or soldier; their life is peculiar." Then we turn to the contestants for athletic honors. Those who train for a boat race, a pedestrian feat, a billiard tournament, or a prize fight, generally belong to the drinking class, and cannot be suspected of moral antipathy to strong drink. But their testimony against it is uniform and emphatic.

LET US REVIEW.

Lest the links of this chain may seem indistinct let us retrace them in a single paragraph.

We put a drop of alcohol into a man's eye. It poisons it. We try it upon the lining of a living stomach. Again it poisons it. We study, after death, the stomachs of drinking men, and find alcohol produces in regular stages, redness, intense congestion, morbid secretions, deeper hurt, destruction of parts, utter ruin. We study its influence upon the health and strength of sailors and soldiers, and find it helps to freeze them in the arctic regions, and exhaust them in the tropics. We watch two regiments on a long march in India, one with and the other without grog, and are driven to the conclusion that even moderate quantities of alcohol weaken the muscles and break the endurance. We visit the training grounds of oarsmen, pedestrians, and prize-fighters, and learn everywhere the same lesson—alcohol is a poison to muscle and brain.

The world is full of such examples, but we choose one short chain of proofs, and submit it for your examination. With such facts before us I shall not insult you by an exhortation. My five minutes are up.

TOBACCO.

A pleasant story is told of Dr. Nott and his students illustrating the excuses made for the use of tobacco. It will be remembered by students of Union College that President Nott's edicts against tobacco were very severe.

The old doctor often walked through the halls of the dormitories late in the evening to see that all was going well. While making this round one night he smelled tobacco smoke. Resolving himself, as Gough would phrase it, into a smelling committee, he put his nose to this and that door until he found the right one. Without knocking he walked in, and discovered four students puffing at long nines. In his severest manner he said :

“Young gentlemen, I will see you to-morrow morning at nine o'clock.”

They knew very well what that meant, and, as they were to be expelled, resolved to make a night of it. So, obtaining a supply of cigars and another article, they smoked and sang till morning.

On walking into his presence, they found

President Nott seated in his arm-chair. Turning to one of the four he asked :

“Why do you smoke tobacco?”

The young men had no idea they would be permitted to defend themselves. The one addressed eagerly exclaimed :

“Mr. President, the reason I smoke tobacco is that I have been very much troubled with water-brash, and a physician told me that smoking would relieve it.”

“How do you find it affects your water-brash?”

“Most happily ; I find it a perfect cure.”

“Ah, indeed ; that is very interesting. I wonder if the profession knows it. Really, it is a very important scientific fact. I must make a note of it.”

So the President deliberately, and with the gravest face, wrote it in his note-book, and then read what he had written, saying as if speaking to himself, “This is very interesting and important.” Turning to the second, he asked :

“Why do you smoke?”

“Mr. President, the reason I smoke is this ;

the fact is my family have all been very much troubled with water-brash, and I thought as smoking was a sure cure for it, that if I smoked now and then it would prevent it."

"This is still more interesting than the case of your friend. Do you find smoking tobacco prevents it?"

"Yes, Mr. President; it has entirely prevented it. I am not troubled with it in the least."

"Astonishing! I must put this down. Prevention is better than cure. Young gentlemen, you surprise me. This is a very important development." Turning to the third one he asked:

"And why do you smoke?"

"Mr. President, the fact is—the reason that I smoke—Mr. President—well, I smoke because—because I am troubled with toothache, and I find that smoking cures it."

"Indeed! Do you really find that smoking tobacco relieves the pain in your tooth?"

"Yes, Mr. President; it cures me at once."

"Young gentlemen, you have made very interesting discoveries. I am surprised that

these facts are not known to the medical profession. It would seem the remedy is not bad to take. You don't find it *very bad* to take, do you?"

"Not so very bad, Mr. President. We are willing to take it for the relief it affords."

Turning to the fourth young man President Nott asked :

"And why do you smoke?"

"Mr. President, the reason I smoke—what makes me smoke—I will tell you why I smoke—the fact is, I am very much troubled with corns."

President Nott rose, saying : "Young gentlemen, will you give me your word of honor that you will not smoke or use tobacco in any other form during your stay in this institution?"

"Yes ; yes, indeed," they cried, grasping his proffered hands.

"Young gentlemen, good morning." And they went away well pleased with the interview.

I know what has been said of the virtues of tobacco. Its friends claim for it the preservation of the teeth, the relief of throat ailments, the cure of consumption, the certain relief of

stomach and liver diseases, the cure of constipation, and now we hear that no smoker has ever been known to commit suicide.

PLUG TOBACCO A POWERFUL POISON.

Tobacco is playing an important part in the morbid development of our nervous systems. I wish to discuss this question frankly. I used tobacco several years. In college I smoked a short, black pipe, and was proud of its color. Having tested the weed, I will tell you in a plain, friendly way what I now think of it.

Tobacco in the state of the ordinary plug is a powerful poison. I do not now speak of a certain extract from tobacco, a single drop of which put upon the tongue of a cat will kill her in two minutes, three drops of which on the tongue of a dog will kill him so quickly he will hardly get out of your arms in his struggles, and ten drops of which will kill a cow inside of ten minutes. I am not speaking of this extract, though it is found in tobacco, but I am speaking of the common plug.

WE MAKE AN EXPERIMENT.

Gentlemen, let us make an experiment.

Here is a boy, ten years old, who has never used tobacco.

“Charles, will you help us make an experiment?”

“I will, sir.”

“Here is a piece of plug tobacco as large as a pea. Put it in your mouth, chew it. Don’t let one drop go down your throat, but spit every drop of the juice into that spittoon. Keep on chewing, spitting, chewing, spitting.”

Before he is done with that little piece of tobacco, simply squeezing the juice out of it without swallowing a drop, he will lie here on the platform in a cold, deathlike perspiration. Put your fingers upon his wrist. There is no pulse. He will seem for two or three hours to be dying.

Again, steep a plug of tobacco in a quart of water, and bathe the neck and back of a calf troubled with vermin. You will kill the vermin, but if not very careful you will kill the calf too. These experiments show that tobacco in its ordinary state is an extremely powerful poison.

Gentlemen, go to your drug stores; begin

with the upper shelves and take down every bottle. Then open every drawer, and you cannot find a single poison (except some very rare one) which, taken into the mouth of that ten-year-old boy and not swallowed, will produce such deadly effects.

MODES OF USING TOBACCO.

There are several modes in which tobacco is used.

First, *Chawing*. Some people call it chewing. *Chaw* is the word. If you don't know how it is done ask some clean housekeeper. She will be eloquent on the subject.

Second, *Smoking*. Somebody has described smoking as a small roll of tobacco with a little fire at one end and a big fool at the other.

Third, *Snuffing*. Snuff-taking is very funny to look at, and particularly fascinating to its devotees; but it is ruinous to the voice, and leads to a form of indigestion which ought to be classified as the snuff-taker's dyspepsia.

Snuff-rubbing, snuff-chewing, and smoke-swallowing, are modes prevailing in various

parts of the world, but not known among us, and need only be mentioned.

Let us next consider the influence on health of some of these modes.

First. Chewing. Look into a chewer's mouth. How red it is. The doctor no longer appeals to it to determine the condition of the stomach. He can learn nothing by examining his patient's tongue. The congestion which produces that strange redness extends a little further down than you can see, and affects the speech. Dr. Cole and Professor Waterhouse affirm that they can always tell whether a public speaker be a chewer of tobacco or not, so peculiar is the influence upon the voice.

Second. Smoking injures the teeth. It is not remarkable that the heat of tobacco smoke and its acrid poison should affect the teeth.

But that is nothing compared with its influence upon the lungs. Put your hand over your eye, fill your mouth with smoke, and blow the smoke up under your hand. Look in the glass. How red the eye is. Tears run down the cheek. What is the matter? There has been a powerful poison in the eye, and yet young

men whose parents died of consumption do not scruple to sit in a smoking room till it is all blue, and take this poison into the delicate structure of the lungs. I believe with Professor Waterhouse of Harvard, that if young men should abandon cigars consumption would be confined more exclusively to women. I believe the great Liebig, when he says that of the German males who die between fifteen and fifty, a large number die of smoking tobacco.

The cigarette mania is becoming serious. The millions consumed by the young men and boys of the country pass all belief. The statements about the opium and other drugs introduced into these cigarettes may or may not be true, but the tobacco in them is tobacco. Need we argue that the use of tobacco in this form is especially to be deprecated, since it is the vice of boys whose brains are in a very susceptible condition? The boy who indulges in cigarettes may win the admiration of other youngsters, but he will not increase the respect of his best friends, and will inevitably lessen his chances of success in life.

JOHN HEENAN'S TESTIMONY.

Interested for forty years in physical training, I have been acquainted with all classes of muscle-men. I have known the pugilists, oarsmen, pedestrians, and billiardists, and would say in passing that I have found many of them interesting persons. With rare exceptions they had been devotees of tobacco. Entering the lists it was hard, with their social environment, to refuse the weed, but they were all compelled to abandon it. During the time Heenan was in training for one of his historic fights I had a long conversation with him and his famous trainer about tobacco. While at Benicia, as some of his fellow workmen there have since told me, John was a devotee of the pipe. In my first conversation with him we had been talking over some of his California experiences, particularly the discovery of that wonderful left fist, when one of his cronies, with cigar in hand, came in crying out, "I've got a good one for you, Jack, none of your two for a cent. I gave a quarter for it, or I am an Injun."

"Hank, you know I can't touch that thing

now. A fellow can't smoke while he is training."

"What's the matter, old fel? You never said die in Benicia."

"See here, Hank, I've got to get this muscle as hard as a brick" (folding his left arm and feeling of the biceps), "and tobacco won't work. Charley would kill me if I were to smoke that cigar. He's just made up his mind that I shall win, and he won't let me look at a cigar. He won't even let the boys smoke in my room."

The trainers of prize-fighters, pedestrians, oarsmen, and billiard champions cherish no moral convictions about tobacco, but they all have one fixed and inflexible rule in regard to its use by their candidates. And that rule is absolute abstinence.

OPINION OF A PEDESTRIAN TRAINER.

I asked an old trainer, who had charge of one of the successful Madison Square Garden pedestrians, how much three cigars a day during the three months of training would probably affect his man.

"I am sure it would beat him," was the reply

A long experience has taught the fraternity of trainers that tobacco is an enemy to muscle, and a still greater enemy to nerve tone and endurance.

TOBACCO AFFECTS THE FINER SENSIBILITIES.

Tobacco excites the base of the brain and lowers the moral tone. To illustrate this, permit me to introduce to you a beautiful girl of sixteen. She shall be as sweet and pure as your imagination can paint her. Each one of you would be proud and happy if you could point to her and say, "That is my sister." Let us listen to her conversation. With a voice of tender pathos she speaks of her invalid mother. With a radiant countenance she describes the flowers and birds of her garden. No expression of face, no tone of voice, no word but savors of sweetness and love. Let her chew or smoke tobacco five years, and can you believe that then her spirit, her moral level, would be what they now are? To say nothing of her lips, tongue, and breath, do you believe she would be as sweet in soul as she is

now? And can you give me any good reason why her brother should escape demoralization? Is it not probably true that the vulgar stories, saying nothing of the saliva nastiness, of the smoking-car and other smoking-rooms, are the legitimate fruit of tobacco?

No devotee of the weed has graduated at the head of his class at Harvard, or any other college where statistics have been preserved, notwithstanding the fact that a large majority of college students are smokers. Even the moderate use of tobacco compromises the muscle and nerve of all candidates for athletic honors, soils the mouth, the breath, the perspiration, and the whole social, moral, and religious being.

I know I but echo the voice of the wise ones of the world when I say that tobacco paralyzes the moral sensibilities more than almost any other habit in which civilized men indulge.

TOBACCO IN CALIFORNIA.

During my three years' camp-life in the mountains of California I visited the village

located on the C. P. Railroad known as Dutch Flat. While walking through its streets, the teacher of the village school was pointed out. He was puffing away at a pipe. It struck me as monstrous that the one man to whom the boys of the village looked for instruction and guidance should smoke tobacco in the public streets. I expressed surprise, but my companion laughed, and remarked, "Oh, we all smoke; the boys begin just as soon as they are out of frocks." It was exasperating to hear a sensible man joke about this wretched habit. I was introduced to the teacher, and after some chat proposed to deliver a public lecture on the subject of tobacco. He was glad to hear the proposition, because they had so few lectures. Notice was given; the house was crowded. The teacher presided and was soundly converted. Mr. Legh Harnett, editor of the Dutch Flat *Forum*, was present. This gentleman, upon going to his office after the lecture, enclosed to me the worst-looking and worst-smelling pipe I have ever seen, and sent with it the following curious poem :

I thank you, Doctor, in that, as a friend,
You've taught me I've some dirty ways to mend;
So, filled with resolution fresh and new,
I now present my dear "old pipe" to you.
I say it not in sorrow, yet I say in pain—
"Farewell, old pipe, we ne'er shall smoke again.
For sweet companion thou wert long to me,
All charred and brown and filthy though thou be.
In years past, a present from a much-loved friend—
No matter, all such feelings now must have an end;
To decency and right I must be true,
So good-by, pipe, I'm wearing of the blue."

Climbing a rough trail in the high Sierras, I fell in with a stalwart young man seeking health in a few months' hunting. He was from Philadelphia, a graduate of Yale College, had been admitted to the bar, and was really a splendid fellow, but he was puffing away at a large meerschaum. He talked about his health, and told me he was disappointed because his recovery was so slow. He had been seven weeks in the mountains. We rode together some hours, and he smoked constantly. I asked so many questions about his habits that he finally inquired if I was a physician, and then asked some questions about his diet, etc.

I spoke of the smoking. He had for several years smoked a little, but had taken it up in

this constant way since he came to California. I advised him to stop. This led to a long discussion. He was a brave, earnest man, and when convinced, suddenly halted, and asked me to hold his horse a moment. Climbing to a little shelf of rock, he laid his pipe on a nice level spot, and with his heel ground it to powder. He said not a word except one curious allusion to a dam, which, as I understand it is an obstruction placed in a river to hold water for manufacturing purposes.

Touching the influence of opium, tobacco, and other poisons of the narcotic class upon the brain and nervous system, physiology has much to say, and much that is most emphatic. But I have thought it sufficient to name a few facts, like the influence of tobacco upon ambitious athletes, and the failure of smokers to reach the first place in our colleges, and then leave the intelligent reader to make the needed inferences.

I am not a preacher. If I were, I should ask you in God's name how you dare indulge in tobacco, or any other demoralizing habit, when you know that every injury done to

yourself will be transmitted to those who may some time call you father. In this view of the subject there is no place for trifling. Every young man of moral sensibilities must deeply feel that he cannot live for himself alone.

GENTLEMEN, I ADVISE YOU TO QUIT.

Gentlemen I advise you to clean yourselves and quit. You will smell better, and that will be a relief to the noses of your intimate friends. It is a nasty, disgusting, ruinous habit. Some one will say, "I can't give it up; I have tried, and can't do it." If you are so enslaved that you can't break your chains, I will help you a little. Stop at once. Don't use any to-morrow. The first day is not very hard, but the second day is pretty tough. Along in the evening of the second day your memory is a little doubtful. You can't say exactly whether it was one brother or three brothers that came over. Things are a little mixed. Be patient. The third morning brings the tug. Now go and take an old-fashioned sweat. Place an alcohol-lamp under your chair, three or four blankets round your shoulders, letting

the other ends rest on the floor, and sweat until your skin is fairly parboiled. You will be just as comfortable for one day as you could wish. There will be no dryness of the mouth, no nervousness. You are perfectly comfortable for one day. The next day you will be in trouble again. Take another sweat ; take even a third or a fourth one. Sweating does not hurt people, sometimes it is good for them. Take three or four thorough sweats, and you will go off under easy sail and have no further trouble from your enemy.

EXERCISE.

INDIAN CLUBS.

Wherever there is a gymnasium connected with a college, the student will resort to it. This is well, but more than this is needed. Bent over your books, your breathing grows less and the air in the room is less pure. With open window, coat off, and vigorous exercise for sixty seconds, you give the vital currents a fresh impetus and sharpen your brain. In twenty minutes the cramped lungs and less

pure air again bring the smart gallop of the brain down to a jog-trot. Rise, throw off your coat, open the windows, and give one minute to vigorous exercise. What kind of exercise? Without doubt, Indian clubs. You can use them in small space, and easily put them out of the way. No exercise hits the needs of the student like the clubs. There is a wonderful variety of movements, very interesting, and they produce a remarkable effect upon the shoulders and chest. Of all exercises they contribute most effectively to the size and strength of the breathing apparatus.

These club exercises will occupy, say, twelve minutes a day, one minute at a time ; but you will find it is very, *very far* from wasted time.

YOU MUST GO OUT.

It should be added that no exercise within doors will suffice. If you would keep in high condition, graduate with honor and go out fully equipped for the battle of life, you must spend from one to three hours a day in the open air. Walking with an intelligent companion is, on the whole, the best outdoor exercise. *If you*

use the clubs as advised, walking is better than any of the games. Much physical harm, to say nothing of interference with brain-work, is being done to college students by the excesses of the oar and ball.

DROOPING SHOULDERS.—A SURE CURE.

This is a serious evil. It compromises both appearance and vitality. A stooping figure is not only a familiar expression of weakness or old age, but is, when caused by careless habits, a direct cause of contracted chest and defective breathing. Unless you rid yourself of this crook while at school, you will probably go bent to your grave. There is one good way to cure it. Shoulder-braces will not help. One needs, not an artificial substitute, but some means to develop the muscles whose duty it is to hold the head and shoulders erect. I know of but one bull's-eye shot. It is to carry a weight on the head. A sheepskin or other strong bag filled with twenty to eighty pounds of sand is a good weight. When engaged in your morning studies either before or after breakfast, put this bag of sand on your

head, hold your head erect, draw your chin close to your neck, and walk slowly about the room, coming back, if you please, every minute or two to your book, or carrying the book as you walk. The muscles whose duty it is to hold your head and shoulders erect are hit, not with scattering shot, but with a rifle-ball. The bones of the spine and the intervertebral substance will soon accommodate themselves to the new attitude. One year of daily practice with the bag, half an hour morning and evening, will give you a noble carriage, without interfering a moment with your studies.

It would be very difficult to put into a paragraph more important instruction than this. Your respiration, voice, and strength of spine, to say nothing of your appearance, will find a new departure in this cure of drooping shoulders.

STRENGTH AND HEALTH.

It is a common idea that health keeps pace with strength. People seem to think that we can determine the comparative health of persons by measuring their arms; that he whose

arm measures fifteen inches is fifty per cent healthier than he whose arm measures ten.

A friend of mine can lift nine hundred pounds, but is an habitual sufferer from torpid liver and low spirits. The strongest men in our city—the cartmen—are not the healthiest. On the other hand, it would be easy to find persons in capital trim who would stagger under a load of one hundred pounds. The circus exhibits a man lifting a large cannon; then there are dozens of riders and vaulters with small lifting strength. If any one supposes that the strong man has better health than the flexible, elastic ones, let him inquire of circus-managers, and he will learn that the balance is almost uniformly with the agile and flexible. Agility and flexibility are (except one is to follow the business of a cartman) more useful than strength, and more reliable indices of health and probable longevity.

Health means the absence of pain and the presence of more or less nerve intensity and enjoyment. As usual, the *negative* part is less significant than the *positive*. An oyster, on the negative plane, has as perfect health as a race-

horse, but on the positive he may not be mentioned. A slow cart-horse is negatively as healthy as the king of the turf, but in the positive region falls far below.

Two young men with equal endowments begin a course of physical training. One works at a lifting-machine and develops great strength. The other engages in active sports, runs, boxes, fences, rides on horseback, and practises many arts requiring a quick eye and presence of mind. Now unless the negative definition of health is the only one, the young man of varied and skilled training is far healthier than the lifter. Or, to avoid a discussion over the definition of a word, he is a far more completely developed being, far better equipped for the thousand and one exigencies of a gentleman's life.

No test of health is more unreliable than the tape-line or success at the lifting-machine.

COLD BATHS.

Having put on a pair of English bath-mittens, dip them in cold water, then between them rub the soap; dip and rub soap again;

one more dip and rub. Now you are ready. Pass your mittens rapidly over the whole person; then with rough towels rub yourself hard. The bath is accomplished by rapid work in forty to sixty seconds, and may be taken in a cold room even by delicate persons with great profit. It begins the day with a fine thrill. For more than thirty years I have taken such a bath almost every morning.

THE VOICE.

The voice is not, like the stature, determined for us; and while each human voice has a distinctive character, which we recognize in an old friend after his features have outgrown our recollection, it is so susceptible of improvement that we may say no function more quickly responds to the touch of the teacher. A teacher of elocution can make large contributions to the equipment of his pupil. But no special training has had so many incompetent professors. Thus far, as usual with new professions, theories have come to plague the teacher. To illustrate this evil, some teachers of elocution have called attention away from simple, direct

voice-training to a curious theory about the diaphragm. Prof. Guillmette, in his otherwise excellent work, tells us in a paragraph which he prints in capital letters, obviously because he regards it as the pivot of his system, that "The diaphragm is the great muscle of voice; that to cultivate the diaphragm is to cultivate the voice." This nonsense runs through the whole work. The fact is, the diaphragm has nothing whatever to do with the voice. Under no circumstances can it act while we are making voice. I told Prof. Guillmette, the last time I met him, that I would give him a thousand dollars if he would even speak his own name while his diaphragm was in action, and that we would submit his achievement to any well-known physiologist.

The diaphragm is in the form of an arch with its swell upward, and as muscles have but one mode of action—contraction—when the diaphragm contracts, or shortens itself, it draws the upward projecting fulness of the arch downward and the air rushes into the chest. When the lungs are filled the diaphragm ceases to act, then the abdominal muscular walls contract,

force the diaphragm upward and expel the air from the lungs. There is no mystery about it. If you simply stand erect you cannot help expelling the air from your lungs correctly, and thus produce your voice in a natural and perfect way.

The tone itself is always produced in the throat. It sounds queer to hear people talk of chest-tones, for I suppose the phrase "chest-tone" means that a certain tone is produced in the chest. No tone is produced below the throat. What the teacher means in speaking of chest-tone really comes under the head of key. When the key is lowered and considerable force is employed, the result known as chest-tone is produced; but every particle of the tone is produced in the throat, though various contrivances above the vocal cords modify tones. The vocal chord is the only mechanism in man which can produce tone.

You should generally speak deliberately and on a low key. In this way you may secure that variety and flexibility which are so effective in elocution. If your ordinary tone is on a high key, your delivery will be monotonous

and strained. If you speak deliberately and on a rather low key, you, and your hearers, will be able to grasp the thousand and one modulations of voice which with a low key for a basis are so easy, and which constitute so conspicuous a feature in effective oratory.

Let me lay down a few rules of elocution. These rules are not the result of experience as a teacher or pupil of elocution, but of observation and long familiarity with the anatomy and physiology of the vocal apparatus.

Rule 1. Stand erect. Rule 2. Use a low key. Rule 3. Speak deliberately. Rule 4. Articulate distinctly. These four rules would hardly fill a volume, but they are the essential elements of elocution.

BRAINS AND BOOTS.

Our brains and boots seem to be sympathizing friends. Good circulation in our feet means good circulation in our brains. Too little blood in our feet means too much in our brains. Good circulation in our feet depends upon our boots. A good boot has the right size, shape, and thickness. In the fashionable boot the

worst defect is in the width of the sole. Among women the average width of the right foot when undressed and bearing the weight of the body is $3\frac{3}{4}$ inches, while the average width of a lady's fashionable boot-sole is $2\frac{1}{2}$ inches. There is a $1\frac{1}{4}$ inch of foot with nothing to stand on. The case is not much better among men. This means mischief.

When the pedestrian craze began, the feet of the walkers were blistered early in the contest. But cunning shoemakers studied the problem, and at the close of the last six days' struggle in Madison Square Garden I visited the scene, and was assured by the trainers that none of the contestants suffered in their feet. I studied their shoes with lively interest, and found that the improvement consisted in a very broad sole at the toes, and the absence of heels, or the use of thin heels.

If you look at a child's foot, or your own, when bare and bearing your weight, you will notice that it does not run to a point in front, and you will conclude that a shoe of that shape will not fit a human foot. Our feet are in the coldest part of the room, and when out of

doors they are on the cold earth. Therefore they should be protected with thick, warm boots.

OUR SKINS.

The skin is a wonderful structure. It regulates the life of all the organs within the body. Suppose the action of the skin arrested by a coating of gold-leaf or close-fitting rubber over the entire surface ; the organs within the body would at once begin to suffer, and death would ensue. Food, exercise, and other agencies increase the temperature of the blood, and soon we should be too hot to live but for a curious action of the skin. Through its millions of pores it evaporates the water within the body, and thus keeps down the temperature. If the heat rises but little, there is but little perspiration. If it rises much, the perspiration is rapid.

The pivotal importance of the skin in the animal economy is strikingly illustrated by the fact that the only treatment of internal pain which continues without change is that which appeals to the circulation of the skin. Drugs for

the stomach come and go, but hot water, mustard, pepper, or other agencies to increase the skin-circulation have been used for thousands of years, and will be for all time to come. He who treats his skin wisely, and eats wisely, will escape the doctors and live long.

To keep the skin in good condition two things are needed, cleanliness and good dress. The cleanliness is best secured by simply moistening the skin with soapsuds on rising in the morning, and wiping off the suds with rough towels, while the dress next the skin, every day of the year, should be wool-flannel, frequently changed.

OUR HAIR.

This important protector of the brain should be preserved. Please observe the following facts :

First. Women wear long hair, use pomades and frizzing-irons, pull their hair hard in dressing it, suffer much from heat in the scalp and headache, and—are never bald. The causes named sometimes take off a patch here and

there, but we never see a woman with a shiny top.

Second. Men never lose their hair below where the hat touches the head ; not if they have been bald fifty years.

May we not expect, if we keep the top of the head hot and moist, that the hair-glands will become weak, and finally too weak to grow hair ?

My own family is predisposed to baldness. A younger brother is quite bald. My hair at sixty is perfect. For thirty years I have worn the ordinary silk hat, with nearly three hundred holes through the top, the holes being about a sixteenth of an inch in diameter. The nap is reversed before the holes are punched, and when it is brushed back to its proper place the holes are never seen except when the hat is held up between the eye and a strong light. Between the sweat-leather and the hat an open corrugated wire is fastened, and extends all around. The ventilation is perfect.

In addition to this the top of the head should be washed with cold water frequently, and vigorously rubbed with the balls of the fingers.

If you keep the head dry and cool, you will prevent those colds which so often result in nasal catarrhs.

OUR EYES.

If near-sighted, do not bend down over your book, but wear glasses, and thus favor your chest and spine. Near-sighted people should not go blindfolded, blundering about the world, but should remove the mist by a pair of good glasses; not the kind that pinch the nose, but those with ear-hooks.

In your studies prefer daylight. Study earnestly while the sun shines, and you can then give your evenings to walking, gymnastics, conversation, and amusements. If you have resolved upon a notable career, close your eyes in sleep before ten o'clock at night. Never study by artificial light in the morning.

When using gas or other strong light, have it fall over your shoulder on your book. The best artificial light yet invented comes from the German student-lamp. The light is very soft and may be placed on the table in front of you.

This lamp is well worth ten times its cost to any student who must use artificial light.

Do not open and shut your eyes while immersed in cold water, as has been advised, but if your eyes become hot or scratchy bathe them frequently in hot water, and then let them rest. Do not strain your eyes at twilight. A weak-eyed student is seriously handicapped.

OUR TEETH.

WANTED, A WIFE.

“Wanted, by a South Carolina planter, a wife. She must be under thirty years of age, with good disposition and good teeth. Address ——.” The above advertisement I found in the *New York Herald*, and thought it worth preserving,

I know nothing of this wife-hunter, but venture the opinion that he is an uncommonly bright fellow, who has been using his eyes and wits and knows exactly what he wants. He has noticed that good teeth mean good digestion and sweet breath. Are not these important in a wife? Health is impossible without

good digestion, and good digestion is almost impossible without good teeth. So you see the South Carolina gentleman is on the right track.

It matters not what the nose and eyes may be ; if the mouth shows complete rows of brilliant gems, the face is sweet and wholesome. But no matter how fine the eyes and nose, if the mouth shows decayed teeth, the face is not sweet and wholesome.

WHY DO OUR TEETH DECAY ?

Listen to the usual answers.

1st. "Because we eat sweet things. Do you not remember how the affected tooth aches when sugar comes in contact with it?"

2d. "Because we eat sour things—acids. We use lemon-juice, vinegar, and other acids ; they hurt the enamel, and then the mischief goes on."

3d. "Because we use hot and cold food and drinks. We take into our mouths hot coffee, then ice-water, now a scalding pudding, then ice-cream. These extremes crack the enamel, and thus begin the work of destruction."

4th. "Because we use saleratus in our food. When saleratus was first introduced into New England we had one dentist; now we have thousands."

THE REAL SECRET.

All these things are bad for the teeth, but you may indulge in every one of them and not lose your teeth, if you *keep them clean!* Clean teeth do not decay. Look at that man's front teeth; see how white and clean they are. How long do you think it would take that front, flat, white surface to decay if kept as clean as it is now? Never, you say. You are right. Now let me ask another question. How long would it take the surface between the teeth to decay if kept equally clean? I answer for you, it would not decay in a hundred years. The enamel between the teeth is as good as that on the flat sides.

Keep your teeth clean and they will not decay!

How shall they be kept clean? Of course with a tooth-brush, says some one. A tooth-brush is a good thing, but one tooth-pick is

worth an armful of tooth-brushes. The tooth-brush does well in keeping the flat sides of the teeth clean. But on those flat surfaces the food does not stick, and so there is little tendency to decay.

The mouth is a warm place, nearly a hundred degrees. Little pieces of meat lodge between the teeth, and, exposed to this heat, soon begin to decompose. Ought we to be surprised that the teeth and gums suffer? I am astonished that they do not sooner take on disease.

The tooth-brush keeps the flat sides of the teeth white, but the means of preservation must be something which goes between the teeth and removes the particles of food.

As already intimated, the tooth-pick is important. With it we may remove most of the food from between the teeth. But as between the double teeth there are fossæ in the opposing surfaces, and as these little depressions are packed full by mastication, the tooth-pick, which simply goes straight through between the teeth, can only remove the larger masses of food, while it leaves the little fossæ or depressions filled with minute particles. It is through

the continued presence of these minute particles of food in these little fossæ that decay begins.

THE NEW TOOTH-SYRINGE.

Just at this angle of thought I wish to mention an important invention. It is a tooth-syringe. The bulb holds quite a quantity of water, and the tube is constructed as follows: The main tube is cut off square about one inch from the rubber bulb. The tip which slides into the main tube is quite long, and at the end is bent nearly to a right angle. Its opening is made large or small at pleasure.

This syringe is left lying on your washstand, and, if convenient, after each meal, is picked up, squeezed, and the main tube plunged into a tumbler of water. The bulb fills in an instant, you slip in the tip, carry it to the mouth, and by squeezing the bulb force a stream through all the spaces between the teeth. You will be surprised, after the most thorough use of the tooth-pick, at the number of particles of food washed from between the teeth. This tooth-syringe was recently shown to a prominent dentist. He carefully examined it, fetched a tum-

bler of water, filled the syringe, slipped in the tip, used it in his own mouth, and upon being asked what he thought of it, said deliberately:

“If this syringe were generally used by the people, nine tenths of the dentists would be obliged to seek some other occupation.”

It really would be difficult to exaggerate the value of this tooth-syringe.

BILIOUSNESS.

This word biliousness is a sort of respectable cover for piggishness. The cure for biliousness is the following:

On getting up and going to bed drink freely of cold water. Eat for breakfast, until the bilious attack passes, one slice of stale bread and a piece of lean beef or mutton half as large as your hand. If the weather be warm, you may take, instead of this, a little cracked wheat or oatmeal porridge. For dinner take about the same quantity of plain food. Go without your supper. Exercise freely in the open air, producing perspiration once or twice a day. In a few days your biliousness is all gone. This result will come even though the

biliousness is one of the spring sort, and one with which you have from year to year been much afflicted. So far from producing weakness and a sense of starvation, such a diet will immediately, and until your bilious attack passes, add to your strength, the sweetness of your mouth, and your general comfort. Bitter drinks—lager-beer, ale, and a dozen other spring drinks—are simply barbarous.

A SHORT LIFE AND A MERRY ONE.

Some persons seem to be willing to suffer indigestion, with its innumerable torments, for the momentary pleasure of slipping down their throats something which tastes good. Is it not funny to see a dyspeptic whose whole life is a failure both as to enjoyment and usefulness, and who, when you point out the connection between his table habits and sufferings, exclaims :

“Oh, I suppose so; but then I go for a short life and a merry one”? That’s a grim joke! Merry? Why, a temperate man who eats and drinks what he needs has more happiness in one day than one of these short-life and merry

people in a year. The temperate man's life is a constant flow of enjoyment. He is conscious of usefulness and of filling a place in the world, while this short-life and merry gormandizer feels that his life is a failure. What the gormandizing dyspeptic means by a short life and a merry one is the momentary tickling of his palate with plum-pudding, followed by hours of belching and groaning.

LET US EAT, DRINK, AND BE MERRY.

"We can't for ever and ever brood over our health. We must have some enjoyment. And then, are we so made that every agreeable thing is deadly? Is it not, after all, as well to have a little comfort and not live so long? Would it not be better to live sixty-five years with real pleasures than seventy-five of wretched self-denial? Come, now, why not enjoy ourselves?"

This sort of talk one hears on every hand, and I must confess that I sympathize with these people. I do not believe that the noblest life is made up altogether of self-denial.

But does anybody really think that he who

devotes himself to his palate, who follows the impulses of his appetites and passions, is happier than he who, by a little thought and courage, trains himself into harmony with the highest and best? Is it true that the only man really happy is he who lives in the base of his brain? May not a man be happy who lives largely on a higher plane?

Is it probably true that a glutton is happier than a philosopher? Is it not probably true that he who has trained himself into harmony with his highest faculties has more enjoyment in a day than a mere animal can experience in many days?

COLDS.

A cold is not, as many think, the result simply of exposure to a change in the atmosphere. You sometimes say when exposed to cold or damp, "Now I shall take my death-cold," and yet next morning you have no cold. At another time, having a hard cold, you say, "Dear me! how did I take this cold? I am sure I have not exposed myself. I cannot understand when I caught this dreadful cold." Such familiar facts

ought long since to have suggested that colds depend but little upon atmospheric changes.

WHAT IS A COLD?

A cold is the product of two factors. One is a certain condition of the within, the other a certain condition of the without. The only soil in which this plant can flourish is a certain condition of the system, the prominent feature of which is a deranged stomach. If the system is prepared through a certain gross condition of stomach and liver, it requires but a slight exposure to draught or dampness to provoke a cold.

The system being ready, a cold is not unfrequently excited by a close, heated atmosphere. I think in a sore-throat cold the proximate cause is generally an unventilated room, and rarely external cold.

Some habits which give tendency to colds should be mentioned. Among these are hot drinks (which, in addition to flooding and weakening the stomach, open the skin and increase the sensibility to external changes), the use of warm-water baths, especially hot foot-baths. sleeping in close, unventilated rooms;

but tenfold more mischievous than all these, the eating excessive quantities of rich meats and pastry.

The old saw, "Stuff a cold and starve a fever," has been the source of much mischief. When you have taken a cold and have some local inflammation, as a nasal catarrh or an inflamed throat, it is just as improper to eat stimulating food as when you are suffering from any other inflammation. If, for example, the cold takes the form of pleurisy, no one feeds it on beef and mince-pie. But I see no reason why a pleuritic stitch may not be thus fed, if lungs inflamed by a cold may be.

CURE OF COLDS.

Treat your next cold as follows, and your faith in the old saying will disappear. Eat no supper. On going to bed and on rising drink a tumbler of cold water. For breakfast eat a piece of dry bread as large as your hand. Go out freely during the morning. For dinner eat the same as at breakfast. During the afternoon take a sharp walk, or engage in some active exercise which shall produce perspiration. Go

without supper and retire early. The next morning you will be nearly well.

If instead of this you stuff the cold, it will stay a week or two, and wind up with a hard cough and expectoration. This feeding a cold belongs to the same stupidity which prescribes whiskey in consumption, a disease always marked by a rapid pulse and other signs of inflammation.

BAD BREATH.

People think bad breath comes up from the stomach. Nothing ever comes up from the stomach except in vomiting or eructation. The passage to the stomach is always perfectly closed, except when something is going down, and even then it is open only where the mass is. A bad breath never comes directly up from the stomach.

SOURCES OF BAD BREATH.

1. *The Mouth.*
2. *The Nose.*
3. *The Lungs.*

Of twenty cases of bad breath, I estimate that fifteen come from the mouth, one from the nose, and four from the lungs. This classification is too precise, but an approximation to the truth.

The Mouth.—The mouth is always to be suspected. I have rarely met a case of bad breath where the teeth were white and the gums healthy. Often while the person keeps his mouth shut and breathes through his nose there is no odor, but as soon as he begins to speak it comes. That man must go to the dentist.

The Nose.—Some forms of catarrh produce bad odors. Ozæna, the worst form, emits a sickening smell. This may be mitigated by a thorough cleansing of the nose. The malady itself is curable.

The Lungs.—A man eats and drinks say five pounds a day. Unless gaining weight he must part with five pounds. If we place on the scales all visible matter coming from his body we shall find it weighs, say, two pounds. Three pounds must escape through the skin and lungs. Sometimes the pores of the skin, from lack of bathing and perspiration, become in part closed. But the poisonous stuff must be

gotten rid of. Now the lungs come in to help the skin. The lungs and skin are ever ready to help each other. But when the lungs are compelled to work off impurities which do not belong to them the excretions become offensive. Bad breath from the lungs may be removed by baths in soapsuds with vigorous use of rough towels, and free perspiration through exercise.

QUINTESSENCE OF THE BLOOD.

All sins begin in the imagination. Where one person is injured by overt acts, many are harmed by lewd thoughts. There are many whose pride forbids all external indulgences, but who permit lascivious fancies to run riot through their imagination. A young man indulges in voluptuous visions. These haunt him until a single passion absorbs his waking thoughts and intrudes even upon his dreams. As this incontinence of the imagination is the parent of all other forms of incontinence, I am astonished that writers on this subject have given it no attention. The fever of voluptu-

ous reveries wears out the nervous system and emasculates manhood.

An intelligent victim of this subjective incontinence, to whom I explained the danger of lewd thoughts and warned that he must break up the habit or become a wretched man, said:

“I can’t prevent my thoughts. I can’t decide what shall come into my mind.”

“But,” I replied, “you can easily decide what shall *not* occupy your mind. It is in this that a man is superior to a brute. Fix in your mind the thought that a sensual fancy is harmful. If one enters it will startle you, and you can change the subject. If you are in earnest, you can set such an alarm in your mind that when a lascivious thought intrudes upon your sleep it will rouse you. It is much easier than to awaken at a prescribed hour, and even this is possible with many people. In thirty years’ professional intercourse with the victims of lascivious dreams, many hundreds have testified to the reliability of this monitor. When you are awake if the enemy enter, you will expel it at once. If there be a moment’s

doubt, spring up and engage in some active exercise. Each effort will be easier, and in a month or two your victory will be complete. There must also be an observance of health laws. Idle, over-fed people suffer most from animal excitements. With brisk walks or gymnastics give yourself a good sweat every day, and eat plain, unstimulating food."

After two months he wrote me a letter full of victory and gratitude. I quote a single passage :

"I do not know in what terms to express my joy that all this is past. I found it difficult at first to control my imagination, but I soon fixed the thought of danger so that when a lascivious fancy appeared it startled me, and immediately I took from my pocket the card you so warmly advised, on which I had written ten words, each suggestive of some subject in which I am interested. Looking over this card, I had no difficulty in changing my thoughts. This policy, with vigorous exercise and plain food, has given me a complete victory. I now believe, what you will remember I began with doubting, that the great waste is

in lecherous thought. I do not see how men are to become chaste unless they learn to control their thinking."

The common notion that abstinence may compromise virility is a physiological error instigated by passion and perpetuated by ignorance. Eminent physiologists who have discussed it, agree with this important statement.

If, seeking high physical strength and endurance with the pedestrian, boat-racer, prize-fighter, or explorer, or great mental and moral power in imitation of the apostle Paul, the great Newton, and other eminent men, you observe entire abstinence, nature well knows what to do with those precious atoms of the blood. She will use them all in building up more vital muscles and a keener brain.

A WELL-KNOWN GALLANT.

While a young woman of rare attractions and talent was sitting in my office, a gentleman well known as a "lady's man" called to ask my signature to a paper. While reading the petition I noticed him, and saw that her sweet face had aroused the "gallant." He began a "gal-

lant" conversation about a bouquet on the table. She made a pleasant remark upon the exquisite beauty of flowers, and then directed the conversation into another channel. As she went on in pathetic, womanly words, describing the helplessness of the crowd of young women in our city, and the urgent necessity of opening new avenues of honorable escape from their many temptations, curious changes came over his face. At first it was the expression of a libertine, then puzzled curiosity, then genuine, manly sympathy. When I handed him the paper, he lingered, and shaking her hand hoped she would send him anything she wished him to read, and he should certainly attend a meeting which she had named.

When the gentleman had left, the young lady sat silent a few moments, and then, in sad tones, said, as though speaking to herself: "What is the matter with men? When I meet a man I listen to his conversation, and if he sympathizes with the ideas which attract me, I like him as I like my brother. But when I meet one whose whole manner is full of mere animal passion, I am discouraged and disgusted.

Have we women no ideas, no sentiments, which can interest men? I cannot tell you how decent women suffer in the treatment they receive from certain gentlemen. A great part of this hat-lifting and obsequious bowing, and 'My dear madam,' and 'I beg ten thousand pardons,' 'Gentlemen, give way! the lady wishes to pass,' and 'I am your most humble obedient servant,' comes to us from men who would vote us less than half pay as teachers and seamstresses, who would deny us a chance to earn an honest living, but give us instead their smiles and favor."

I was very curious to hear what the gentleman would say. As I expected, he soon came to talk of her. He frankly told me that he had never before met a woman who was too much for him. "Why," said he, "she wouldn't respond to my touch at all. She just took me off my feet and carried me right into the midst of her hobbies. I was never so taken aback in my life. I must confess that I never before met a woman that I should be willing to marry."

Then I told him all she had said, and I think

I have never seen a strong, proud man so humiliated. If she had been in the next room I believe he would have thrown himself at her feet and begged forgiveness. He was in dead earnest, and I pleaded with her to allow him to call upon her, but she persistently refused. "I will send him books and papers," she said; "I will do all I can to convert him to purity, but I must be spared the pain and shame of being near him again."

When I reported this to him he could hardly believe me. He exclaimed :

"She is only a woman, and in one year I will conquer all that nonsense; you see if I don't."

"Major," I said, "you don't understand this kind. The sort that you have vanquished have no moral aspirations, and are waiting and longing to be vanquished. But this one belongs to another class. She has moral ideas and aims, and you might as well try to fly as to reach her level. Her person is very beautiful, as you saw, but no man will ever possess it without first winning her soul; and, Major, it

is only fair to warn you that your struggles in such a race will leave you in the lurch."

There are thousands of young women who endure this animal spirit in men because they think they must marry, and cannot afford to be true to their highest sentiments, but who in their souls feel just as this young woman did. They see through all those peculiar smiles, and in their souls long to have you appeal to the highest and best in their being.

LONGEVITY.

History teems with interest in longevity. Remarkable compositions have come down to us from ancient times devoted to the subject. The Bible holds up immortality as the greatest good an Infinite God can bestow, while down deeper in our being than all other instincts or desires is the longing for life—eternal life.

Length of life is the product of two factors:

1st. Inheritance.

2d. Habits.

Men differ about the relative importance of the two. Some think inheritance is every-

thing. While those who have studied the subject conclude that inheritance is one part and habits three. Still deeper study leads to the conviction that inheritance is one part and habits ten.

At our "SOCIAL SCIENCE HALL," where we discuss many subjects, Col. B. and myself were called upon to present our views upon the "*Conditions of Longevity*."

Col. B., a devotee of good dinners and wines, said:

"Ladies and gentlemen: I have given no special attention to the subject of longevity, but I will repeat a newspaper anecdote which I can but believe you will agree with me sets this matter in its true light. Two very old men were called as witnesses in a case involving an ancient land title. One of them having given his testimony was about to step down, when the Judge asked:

" 'How old are you?'

" 'One hundred and four, my lord.'

" 'How did you contrive to live so long?'

" 'By strict temperance in all things, my lord.'

"The Judge, a warm advocate of temperance, cast a glance of triumph at a group of young men, and the witness took his seat.

"When the other old man had finished his testimony, the Judge, thinking to deepen the impression made by the first man, asked:

"How old are *you*, my man?"

"One hundred and seven, my lord."

"How did *you* contrive to live so long? Speak up loud so that all may hear. Let the young men in the gallery listen and learn how a man may live one hundred and seven years. Speak up loud my man."

"Well, Judge, I have kept myself full of good beef, chewed and smoked tobacco all my life, and I hain't drawn a sober breath in a hundred years."

When Col. B. had reached this point, "Hear, hear," was heard on every hand, and the Colonel took his seat in a storm of applause.

It was now my turn:

"Ladies and gentlemen, I have no anecdote for you, but I will give you the results of some investigations on this subject.

"Under an engagement to prepare a volume

on 'Longevity' for a Boston publishing house, I went abroad in pursuit of facts, and spent several months in the British Museum Library. That institution contains, probably, more longevity literature than all the other libraries of the world. Among a great number of very old persons whose recorded habits I studied I will give the facts in one family:

"During the first half of the eighteenth century attention was called to a Yorkshireman whose parish registry proved him to be 98 years old. This man's son John lived to be 97, John's son Edward reached 94, and Edward's son David achieved 99.

"Of the four families in which these very old men appeared the following additional facts are given: In the first family there were 12 children, in the second 11, in the third 8, in the fourth 14. Leaving out of the reckoning the four men of notable longevity, the remaining children in the first family lived to an average age of 62 years; those in the second to 64; in the third to 36; and those of the last family to an average age of 51 years. This statement will occasion no surprise to the stu-

dents of longevity, for to them it is a familiar fact that nearly all persons remarkable for long life have brothers and sisters who die early.

“The story of the daughter of David is most interesting. This daughter of the ninety-niner writes with tedious, loving detail of the lives of her ancestors. Of the first of the four old men she says: ‘It is strange that my great-great-grandfather should live so long, for he was thin and pale, and never ate any meat or drank any beer. His brothers and sisters were hale and hearty, and yet they all died early.’ Of the second member of the quartette she says: ‘My great-grandfather was such a small eater they thought he would never be good for anything. Even when he was at work in the fields he lived on simple bread and milk. His brothers and sisters had wonderful appetites, and some of them were so stout that everybody thought they would live to be a hundred, but the Lord took them away early.’ Of the third she says: ‘My grandfather was very delicate and slender, and a small eater. But while all his brothers were wonderful hearty and healthy, he outlived

them all a great many years. God's ways are mysterious.' Of her father she writes very fully, saying in one paragraph: 'He was the best man I ever saw, so loving and patient, and he did a great deal of hard work, which is so strange when we think that he took hardly food enough to keep him alive, and yet the day he was 99 he walked two miles. It all seems so strange, for some of my uncles, who died before they were fifty, were hearty eaters and a great deal stronger than my father. It always seems to me that God loved my dear father, and let him stay with us, who loved him so much.'

"It will be observed that of the 41 persons in these four families who died young it is said they were 'hale and hearty,' 'wonderful appetites, and some of them were so stout that everybody thought they would live to be a hundred,' 'wonderful hearty and healthy,' etc.; while of the four who lived to be nearly 100 it is said, 'never ate any meat or drank any beer,' 'when at work in the fields lived on simple bread and milk,' 'small eater,' etc. etc.

"These facts illustrate the law that great

temperance in eating is an essential condition of longevity."

It was now Col. B.'s turn :

"Ladies and gentlemen, I have no confidence in these patent-right methods of salvation. I don't believe that going to roost with the chickens, and living on bran and moonshine will secure immortality. Longevity is inherited. If your progenitors were long-lived you will be ; if they were short-lived you will be short-lived, and that's all there is of it ; you can't help yourself any more than you can prevent being tall or short. Tendency to long life, like that to short life, or consumption, or epilepsy, or a hundred other things, comes from your parents, and not from denying yourself the good things of life. What is the reason for the early death of all the members of some large families ? Is it because they sit up late and eat good food ? No ! They have received from their parents defective constitutions, perhaps tendency to consumption. Does anybody suppose that if such persons went to bed at sundown and dined on fruits and cold water they would live forever ?" "Hear, hear !" and

the Colonel sat down, in another sea of applause.

The chairman called upon me.

“Ladies and gentlemen, I find myself on the unpopular side, but will venture to add a reason or two in support of my convictions.

“I do not pretend that a man’s life may be protracted indefinitely, but I believe that the average man inherits eighty years, while the average length of life even among the better peoples is only half of eighty. Animals generally live out their full term, while man with all his wisdom lives but half of his.

“If I were to ask this audience, one by one, to explain this, every one of you would say it is the result of man’s transgressions of the laws of life.”

Colonel B. rose, in an excited manner, and said :

“Will the gentleman permit me to ask a question?”

“Certainly, Colonel, you may ask a dozen.”

“You all know Captain Dakely. He is 61. And you all know Deacon Phelps. He is 96. You will agree with me that the captain is

really older than the deacon, more likely to die this year. What is the cause for Dakely being older at 61 than Phelps at 96? I will tell you. The captain's parents died before they were 60, while the deacon's parents lived till they were nearly 100."

I said: "I am particularly grateful to the Colonel for coming to the point, and to you for not applauding until you see how the discussion ends.

"I am glad the Colonel has referred to the cases of our neighbors, Dakely and Phelps, because we know the facts.

"The Dakely family strongly supports the views I am advocating. Capt. Dakely, whose habits have been bad, is an old man at 61, and his parents, whom I did not know, both died before 60. Does this prove that Capt. Dakely is old at 61 because his parents died at that age? If so, what do you say of the Rev. Edward Dakely, brother of the captain, whose personal habits are a model, and who, as many of you know, at the age of 73 is discharging the duties of pastor of a large church, and promises to live 20 years longer?

“The other case is still more convincing. It is true that Deacon Phelps, a model of sobriety, is a very old man, and at present bids fair to become a centenarian; and it is also true that both of his parents, who were remarkable for temperance in all things, lived to almost 100. But observe, they had a family of 14 children, 8 of whom died before they were 50 years old, and not one of the rest, except the deacon, lived to 70. Many of us know the bad habits of some of the brothers, and I have heard hard stories of others. They were not drunkards, but gluttons. Several of them were persons of exceptional vigor, greatly superior to the deacon. The deacon has told me that from his earliest years he was rather delicate, and a remarkably small eater; that it was a common remark at their family table when he was a boy that he ate less than either of his sisters; that from the beginning of life he was very abstemious. This would seem to be the secret of his longevity. The Colonel says, ‘If your parents lived long, you will live long; if they died early, you will die early, and that’s all there is of it.’ Then how does it happen

that 13 out of 14 children failed to inherit long life?

“With these facts before us, I ask the Colonel whether he adheres to his statement that, ‘If a man be born of long-lived parents he will live long; if he be born of short-lived parents he will be short-lived, and that’s all there is of it?’ Does the Colonel believe that Captain Dakely is worn out at 61 because he came of short-lived parents? If so, what does he say of the brother who has reached 73 and will probably climb to 90?

“And if Deacon Phelps has lived to his extreme age because he came of long-lived parents, what does he think of the premature death of his 13 brothers and sisters?”

Colonel B. said:

“Ladies and gentlemen, my views upon this subject I will express more fully upon some future occasion. For the present I will add that it is absurd to talk about mere *length* of life. It is not the number of years we breathe and sleep, but what we think and do. Who would exchange Shakspeare’s half century for the century and a half of Thomas Parr? Every

man who has deeply impressed the world has died young. Consider Alexander and Napoleon. Who would exchange such careers for a century of cabbage head? Give me a great, glorious career, rather than ten centuries of eating and sleeping. My friend goes for *quantity*, I go for *quality*. Those who desire a century of vegetable life may go over to him. You who go for power and achievement must come to me. You who would save up your force and crawl through a century may join him, but you who favor railroads, telegraphs, and victory, must come to me. Remember, he stands for *quantity*, I for *quality*. That's the distinction between us. As I shall not speak again, don't forget this distinction."

The chairman called upon me.

"Ladies and gentlemen, I am amazed at the statement that the great men of history have all died young. It is true that a few of the great fighters have died young, but it is equally true that a large majority, even of the fighters, have lived long.

"Turning from warriors to statesmen, philosophers, men of science, letters, art, and religion,

is it true that the great men have died young? I affirm that an immense majority have lived long and have become great in many cases because of their many years. If Colonel B. challenges me to the proof, I will give a list of fifty names here and now; or if he chooses, I will prepare a list of a hundred names, and read them at our next meeting, and then show that of the hundred men most famous in philosophy, religion, statesmanship, science, art, in every department of great and good achievement, an immense majority have lived long, and become great, because they did not die young.

“Distance in time as in space involves uncertainty. So let us consider the great men who have shone in Europe during the last fifty years. Have they died young? Is it not true that they have generally risen to supreme heights in old age?

“If you would study, as I have, the family life of these great men of our own time, you would learn that they are exceptional in their own families for two things—table abstemiousness and longevity.

"The Colonel thinks there is an antagonism between *greatness* and longevity, while history proves that longevity is an almost uniform sequence of *true greatness*, that no other anchor to life is so strong. If education were harmonious, the cultured class would be very long-lived. Beginning with the idiot who dies at twenty, we might ascend the scale to our greatest philosopher, and find that, as a rule, the height in development is a true measure of longevity.

"The Colonel says I go for *quantity*, and he for *quality*, and begs you not to forget the distinction. You now see that I go for both, because the Creator has combined the two.

"The Colonel asks, 'Who would exchange the 50 years of Shakspeare for the 150 of Thomas Parr?' No one, I presume. I would rather be the medium of one of Shakspeare's inspirations than to live an eternity of eating and fashion. Give me a single day of Howard's life rather than a century of mere pleasure,"

At our next meeting, the Colonel in his courteous way protested against any further discussion of a subject about which there

seemed so much feeling, and insisted that some literary or scientific subject would be better.

I have studied the recorded habits of 200 centenarians, and have learned :

1st. A large majority were remarkable for table moderation. In no case is it mentioned that large eating was the habit.

2d. In a great proportion I find total abstinence from intoxicating drinks, or extreme moderation. In no case is a free use of spirits recorded.

3d. In a large number it is mentioned that they retired and rose early. In no case is it said that late and irregular hours was the rule.

4th. In many cases it is stated that the centenarian lived much in the open air.

Physiology would name these very habits as the most effective contributions to longevity.

There is a popular notion that tobacco and drink kill the people. Where one person dies prematurely through tobacco or drink, ten succumb to gluttony.

Read carefully page 37 and you will discover lurking there the enemy which more than any other cuts us off in the midst of life.

CONCLUSION.

It matters little what a man may say or do in Europe or Asia. Life in those quarters of the world is fixed. The tree is old and will not bend. Here the giant twig inclines to every breeze. Here, dominated by purpose and courage, a man of moderate capacity may enter upon a noble career.

A young man now in college confides to me that he does not believe in any life after this ; and as all will soon be over he sees no motive for exertion. Without, for the moment, challenging his unhappy conclusion, I ask him if he sees no opening to immortality in the future of his country ? In the midst of the forces now so actively developing the future America, I call upon him to speak a brave word, to achieve a noble deed, which must go on vibrating through all this fifth act in the great drama of civilization.

Young gentlemen, the hope of our country, the world is before you. I am an old man,

the world is behind me. But I comfort myself with the hope that these simple health rules, "the best fruits of my life-thought," may find a friendly welcome among you, and in the morning of life, do for you, what nature denies to those who in the evening sit and gaze towards the sunset.

GENTLEMEN, having finished what I wish to say about your personal habits, I ask your powerful co-operation in another and most important work.

We have striven to convince women that the corset is an enemy to health and beauty. Their indifference to the appeals of physiology and art is amazing. We urge that the Creator's taste is better than the dressmaker's; we point to certain unhappy results universal among the victims of the corset; we present an array of overwhelming facts and arguments, but are told as a finality that gentlemen prefer small waists. If they preferred still smaller waists, women would contrive, we may pre-

sume, to reduce themselves to still smaller dimensions ; but if they preferred natural waists, very soon we should see natural waists.

I do not believe young women will ever abandon the corset while they imagine it pleases young men. I am confident that if the army of influential young men in our colleges could understand the subject, the worst of all dress errors would vanish.

This great work, in which you all have a deep interest, must, I am convinced, be left in your hands. One more argument is respectfully submitted for your consideration in the paper from the *North American Review* published herewith.

I take the liberty to introduce the main argument by a few kindred and curious facts, to illustrate the mysterious power of fashion.

CURIOUS FASHIONS.

THE managers of the *North American Review* asked me to prepare for that admirable magazine a paper upon the "Health of American Women." The paper, already published, is devoted to the mischievous influence of woman's dress.

The writing of this paper, with the reading of that admirable work of the distinguished Prof. William Henry Flower, upon "Fashion in Deformity," which appeared in London in 1881, have suggested the preparation of this little volume. I have drawn from Prof. Flower's work as freely as possible in all sorts of ways, and republish here my article in the *North American Review*, with certain extensions and amplifications which seem to me important.

THERE is hardly a portion of the human body which has not been deformed in obedience to fashion. The hair, skin, nails, ears, nose, eyes, lips, hands, feet, and trunk have all been victimized.

In briefly considering human fashions it is convenient to divide them by the part of the body affected.

THE HAIR.

We begin with the hair. In all ages of the world it has been made the subject of strange freaks of fancy. Even the color of the hair has been determined by fashion. Not only the natives of the Pacific isles change their hair, naturally black, to a tawny brown by the application of lime, but the most advanced races change dark hair to various shades of light color by chemical means.

One of the most remarkable caprices is found in the curious forms and shapes into which the hair has from time to time been dressed. In England, at one time, hair-dressing was so elaborate that it occupied three or four hours, and when a large social gathering called for a general hair-dressing, the number of hair-dressers being limited, a part of the ladies were obliged to have their hair greased and twisted into the mode four or five days before the party. This made it necessary for them to sleep sitting up during the time intervening between the hair-dressing and the grand event. The rich had their heads dressed on the very day of the party, while those with the smallest means may have had their turn several days in advance.

In many countries the hair is shaved from the head. Sometimes this practice is confined to men, sometimes to women. When head-shaving is confined to men, the women cultivate a luxuriant growth of hair. When the shaving of the head is confined to women, as among the Fijians, the men cultivate, at great expense of time and attention, an enormous growth of hair, which they dress after the most elaborate fashion. In some parts of Africa removal of the eye-brows is essential to beauty. Special pincers for the purpose form part of the appliances of the toilet.

THE NAILS.



FIG. 1.—CHINESE FINGERNAILS.

In "Tylor's Anthropology" we find the accompanying picture (*Fig. 1*) of the nails on the hand of a Chinese ascetic. I have

myself seen nails fully two inches long on Chinese hands. This fashion, like some others we are to consider, is traceable to a desire to show one's fellows that one is not a workingman. This wish has inspired many curious fashions.

THE SKIN.

Tattooing has been common among the uncivilized peoples of the world. The rudest forms of the art were practised by the now

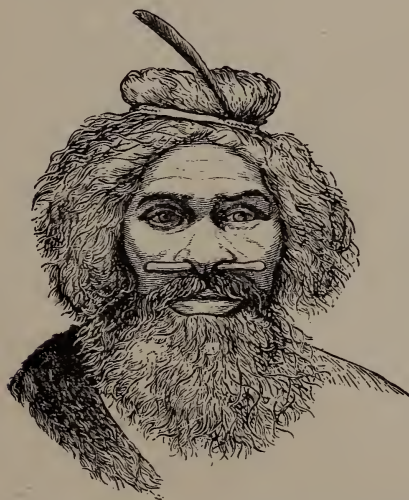


FIG. 2.—THE AUSTRALIAN'S NOSE-BONE. (See page 4.)

extinct Tasmanians and some tribes of Australians. They produced deep gashes with sharp stones over many parts of their persons, then rubbed wood ashes into the wounds, compelling deep sores, so that ugly scars followed.

Peoples with more artistic taste have tattooed their persons by inserting into the skin lamp-black, India ink, and other coloring matters, often in beautiful patterns. Among the white races, tattooing is confined to sailors, and is usually practised with a high degree of artistic skill.

THE NOSE, LIPS, AND EARS.

The nose, lips, and ears have offered great temptations for the display of ornament.

The cut (*Fig. 2*) shows the nose-bone ornament of the native Australian.

This Australian's nose-bone is as large as a finger and six



FIG. 3.—THE BOTOCUDO'S LIP ORNAMENT.

inches long, reaching quite across the face. It closes both nostrils, so that the wearer is obliged to keep his mouth open to breathe, while he snuffles so in speaking that his companions can scarcely understand him. Many millions of the women of India wear rings in their noses. English families returning from India often bring with them as servants young women who excite much curiosity in England by their large nose-rings.

In "Bigg-Wither's Pioneering in South Brazil" (1878) we find the accompanying picture (*Fig. 3*) of a Botocudo Indian. That plug that hangs in the lower lip, and is passed through a hole, is

heavy, and drags the lip down below the chin, exposing the gums and teeth. To our taste this is not beautiful, but to the Botocudo's taste it is very beautiful. This practice of making holes through the lips, and hanging weights in them which drag the whole face out of shape, is very common in many parts of the world. Dampier describes it as prevailing among the natives of the Corn Islands off the Mosquito Coast, in Central America. The Eskimo, in the extreme north of America, "pierce the lower lip under one or both corners of the mouth, and insert in each aperture a double-headed sleeve-button or dumb bell-shaped piece of bone, ivory, shell, stone, glass, or wood. The incision, when first made, is about the size of a quill, but as the aspirant for improved beauty grows older, the size of the orifice is enlarged until it reaches the width of half to three quarters of an inch."

These customs are carried to great excess among the Thlinkeets, who inhabit the south-eastern shores of Alaska.

"Here the women pierce the nose and ears, and fill the apertures with bones, shells, sticks, pieces of copper, nails, and attach heavy pendants, which drag down the organs and pull the features out of place. But the wooden lip-ornament is the crowning glory of the Thlinkeet matron. It has been described by a multitude of eye-witnesses. In all female free-born Thlinkeet children, a slit is made in the under lip, parallel with the mouth, and about half an inch below it. A copper wire, or a piece of shell or wood, is introduced into this, by which the wound is kept open and the aperture extended. By gradually introducing larger objects the required dimensions of the openings are secured. On attaining the age of maturity, a block of wood is inserted, usually oval or elliptical in shape, concave on the sides, and grooved like the wheels of a pulley on the edge in order to keep it in place. The dimensions of the block are sometimes six inches in length and four inches in width, and about half an inch thick round the edge, and highly polished. Old age has little terror in the eyes of a Thlinkeet belle; for larger lip-blocks are introduced as years advance, and each enlargement adds to the lady's social status, if not to her facial charms. When the block is withdrawn the lip drops down upon the chin like a piece of leather, displaying the teeth, and presenting altogether a ghastly spectacle. The privilege of wearing this ornament is not extended to female slaves."

"The Bongo women," says Schweinfurth, "distinguish them-

selves by an adornment which to our notion is nothing less than a hideous mutilation. As soon as a woman is married, the operation commences of extending her lower lip. This, at first only slightly bored, is widened by inserting into the orifice plugs of wood, gradually increasing in size, until at length the entire feature is enlarged to five or six times its original proportions. The plugs are cylindrical in form, not less than an inch thick, and are exactly like the pegs of bone or wood worn by the women of Musgoo. By this means the lower lip is extended horizontally till it projects far

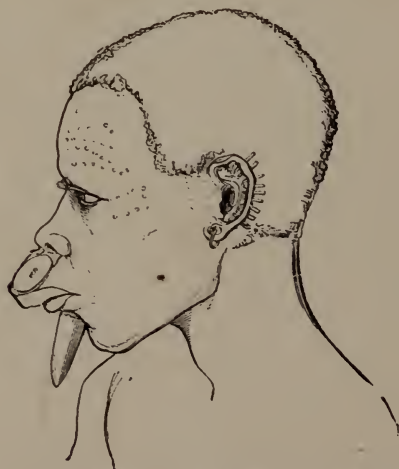


FIG. 4.—THE AMBITIOUS LOOBAH WOMAN. (See page 7.)

beyond the upper, which is also bored and fitted with a copper plate or nail, and now and then by a little ring, and sometimes by a bit of straw about as thick as a lucifer-match. Nor do they leave the nose intact; similar bits of straw are inserted into the edges of the nostrils. A very favorite ornament for the cartilage between the nostrils is a copper ring, just like those that are placed in the noses of buffaloes and other beasts of burden for the purpose of rendering them more tractable. The greatest coquettes among the ladies wear a clasp or cramp at the corners of the

mouth, as though they wanted to contract the orifice, and literally to put a curb upon its capabilities."

In Schweinfurth's "Heart of Africa" we find this picture (*Fig. 4*) of a Loobah woman. She seems inspired by a loftier ambition. For you observe she not only has the plug in her under lip, but has made a large opening in her upper lip, into which an enormous wheel has been inserted. When these women wish to drink they have to separate their lips with their fingers, and, holding their heads in a convenient position, pour the water into their mouths. You will observe, too, that a row of holes has been made through the ear, in which various ornaments have been inserted.

A traveller who has studied these fashions in Africa exclaims:

"Even among these uncultured children of nature human pride crops up amongst the fetters of fashion, which, indeed, are fetters in the worst sense of the word: for fashion in the distant wilds of Africa tortures and harasses poor humanity as much as in the great prison of civilization."

These distortions of the lips are sometimes so monstrous as to defy all belief. They prevail in various portions of Africa, the islands of the Indian and Pacific oceans, and in North-western America. The number of women who are willing and eager slaves of these hideous fashions is very large.

The ears have in all nations become the victims of fashion. Among the most civilized peoples of Europe and America women make holes through their ears and introduce ornaments. It used to be common among men in some European countries, but has been mostly abandoned.

Among certain savage tribes these holes through the ears are made very large, as, for example, in the man of the Island Mangea, who figures in Captain Cook's account of his voyages, and who carried a large knife through a hole in his right ear. The New Zealanders of both sexes, when first visited by Europeans, had holes bored through their ears, and so enlarged by stretching that they carried various articles hung in them, as we carry things in our pockets. Besides this, they hung in these holes as ornaments the teeth of their relatives, the teeth of dogs, and anything else that they thought curious or valuable. The iron nails given them by the English sailors were at once conveyed to these receptacles. The *Zulus* lately exhibited in London carried their cigars in the same manner. Mr. *Wilfred Powell* says that he saw a man on

one of the islands near New Guinea whose ears had been converted into great pendent rings of skin, through which he could easily pass his arms.

THE TEETH.

We admire white teeth, but the Malays take the greatest pains to stain their teeth black, which they think adds to their beauty. White teeth are looked upon with the greatest disgust by the Dayaks. In addition to staining the teeth, filing the edges or the

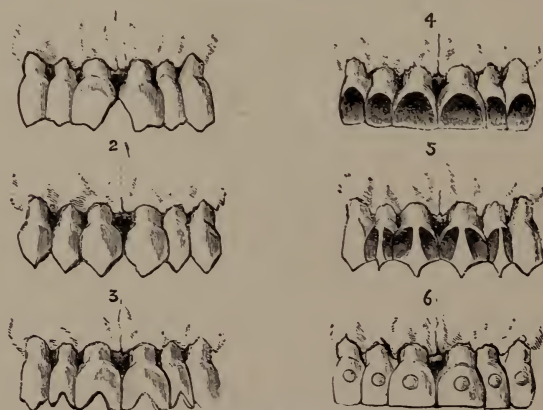


FIG. 5.—CURIOUS FASHIONS IN TEETH.

surfaces in some way is a fashion which millions of people follow. The cut (*Fig. 5*) represents some of these curious fashions. The last one, No. 6, represents a common custom. Holes are made through the teeth, and brass pegs riveted in. Of course all this is accompanied by pain, but what devotee of fashion hesitates on that account. Among the peoples where such fashions obtain, even the upper classes indulge in them. The Siamese Envoy who visited England in an official capacity in 1880 had his upper teeth treated after the fashion in No. 4, and one of his suite had them pointed as in No. 2.

THE SKULL.

Impossible, the reader will exclaim. Surely the bony skull has not been tampered with by fashion! Millions of people, and in many widely separated parts of the earth, have had, and still have, fashions in the shape of the head. The cut (*Fig. 6*) shows one form which is described in the narrative of Commodore Wilkes' "United States Exploring Expedition." Mr. Drayton obtained the drawing of this child's head at Niculuita. The bandages had just been



FIG. 6.—A CHILD'S HEAD IN THE ELONGATED STYLE.

removed, and the parents showed great delight at their success. This fashion was common in the earlier history of Europe, and so common is it now in the neighborhood of Toulouse in France that the peculiar form which is fashionable in that neighborhood is still known as the Toulouse Deformity. It has been one of the fashions in the world for several thousand years. Hippocrates gives an interesting description of a fashion in the shape of the head which he met among a people living near the boundary between Europe and Asia. Herodotus, Strabo, Pliny, and other historians have mentioned similar fashions among ancient peoples.

The three skulls (*Fig. 7*) now in the Museum of the Royal College of Surgeons were brought from widely separated parts of the earth.

A, from an ancient tomb at Tiflis; B, from Titicaca in Peru; C, from the Island of Mallicollo, New Hebrides. The history of the world is full of the story of fashion in the shape of the head.



FIG. 7.—SKULLS IN MUSEUM OF ROY. COLL. SUR.

Figure 8 shows the skull of an infant who had died during the process of squeezing. Figure 9 shows the skull of an ancient

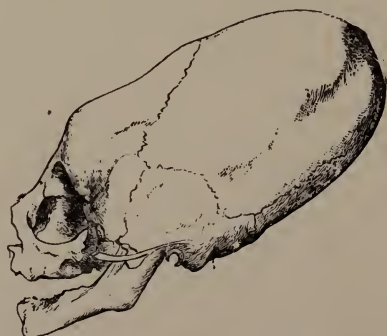


FIG. 8.—SKULL OF AN INFANT WHO DIED FROM THE SQUEEZING.

Peruvian. These, and the skulls pictured in Figures 10, 11, and 12, are in the museum of the Royal College of Surgeons.

Figure 10 gives a posterior view of a cranium deformed, with compensatory lateral widening.



FIG. 9.—SKULL OF AN ANCIENT PERUVIAN.



FIG. 10.—PRESSURE ON FOREHEAD AND BACK OF THE HEAD WITH LATERAL BULGING.

Figure 11 shows a posterior view of a cranium where it was the fashion to have long and perpendicular heads.

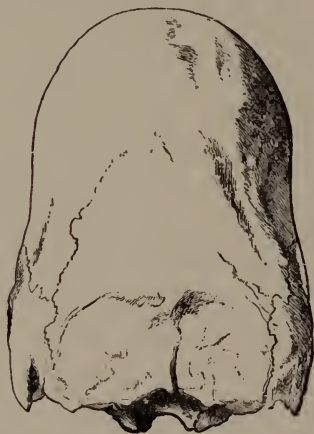


FIG. 11.—ELONGATED, PERPENDICULAR STYLE.



FIG. 12.—ELONGATED STYLE. UPWARD AND BACKWARD.

Figure 12 shows another skull which was in conformity with the fashion of long heads, but elongated backward and upward.

THE HANDS.

There is not much to be said about fashion in hands, though it has been common enough among some tribes of American Indians, some tribes of Africans, Australians, and Polynesians, and especially among those greatest slaves of fashion, the Fijians, to chop off one or more fingers in obedience to the demands of fashion. The pretence (for nearly all fashions have explanations)—the pretence is, that it is performed as a token of affection on the death of a relative, which suggests the fashion of widows burning themselves with the dead bodies of their husbands.

THE FEET.

Fashion has pursued the feet with the vindictiveness of a fiend. Strangely enough, fashions in feet, far more injurious to health

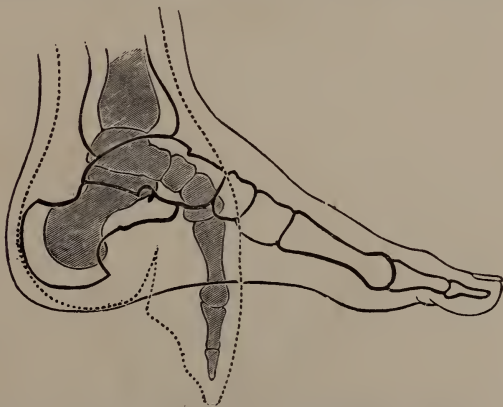


FIG. 13.—OUTLINE OF NATURAL AND LIKewise CHINESE FOOT.

than any that have yet been named, obtain mostly among the civilized and highly enlightened peoples of the earth.

Figure 13 shows the natural foot, and likewise the shape secured by years of bandaging among the Chinese.

During the first year the pain is so intense that the little girl can do nothing but lie and cry and moan. For about two years



FIGS. 14 AND 15.—PHOTOGRAPHS OF A CHINESE WOMAN'S FOOT.

the foot aches continually, but finally the parts become so wasted and bloodless that the limb is insensible.



FIG. 16.—FASHIONABLE FRENCH SHOE OF THE PRESENT DAY. (See page 15.)

Figure 14 shows a side view of a Chinese woman's foot. The photograph was taken by Dr. R. A. Jamieson. It will be noticed

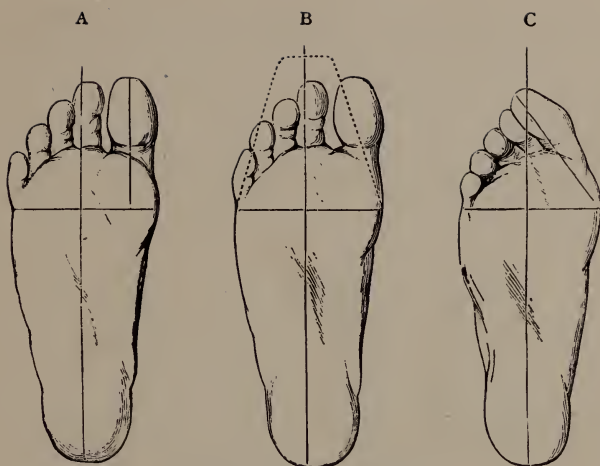


FIG. 17.—NATURE AND ART.

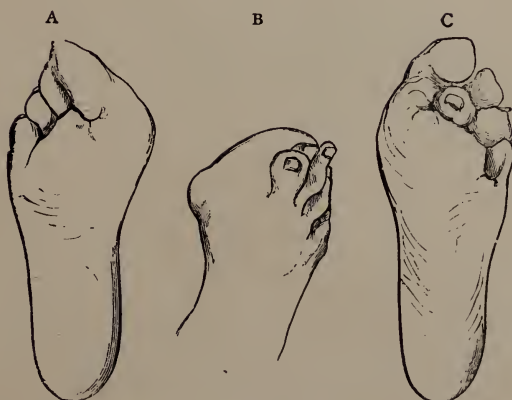


FIG. 18.—EFFECTS OF BAD SHOES.

that all the toes but the big one have been turned entirely under the foot, so that the width of the shoe in front is that of the big toe. The "golden lily," as the Chinese lady calls her little foot, can never recover the natural shape. Figure 15 gives a picture of the bottom of the Chinese woman's foot. Figure 16 is from the newspaper advertisement of a fashionable ladies' shoemaker. This is an alarming approximation to the Chinese idea.

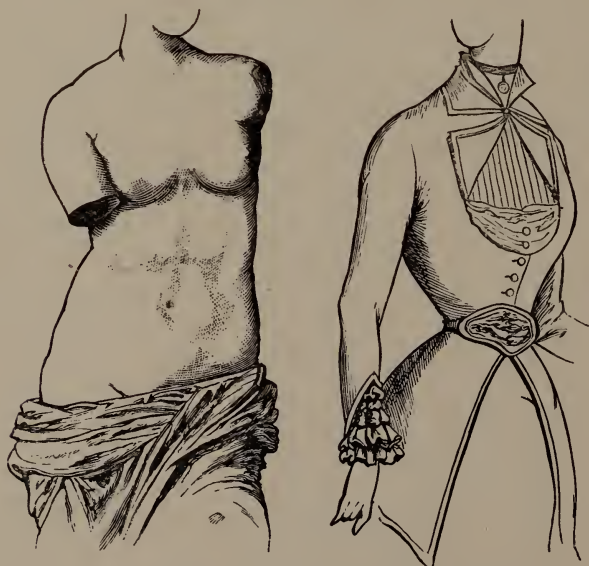


FIG. 19.—NATURAL AND ARTIFICIAL FORM. (See page 17.)

Figure 17 shows, in A, the natural foot, such as a child has, and would continue to have if a shoe did not distort it. B shows the same natural foot with the shape in dots of the shoe-sole in common use among us. C shows the foot after wearing such a shoe for some years.

Figure 18 shows three feet, all the property of poor people—

A and B the foot of a working woman, C, a working man. These persons being poor had worn ready-made shoes.

THE WAIST.

Now we come to the most astonishing fashion the world has ever seen, more destructive of human health than all the previous fashions put together. If every one of the fashions of which we

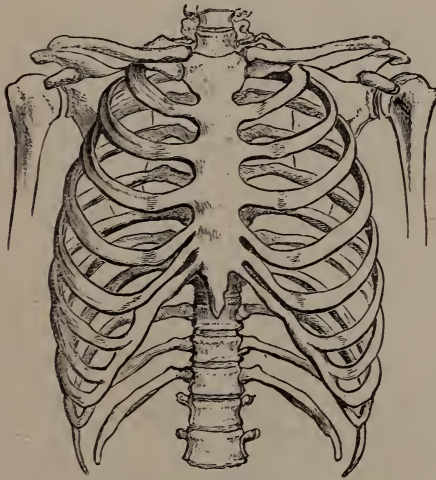


FIG. 20.—NATURAL FORM OF THE SKELETON.

have spoken—long nails, nose-bone, lip ornaments, filed and blackened teeth, distorted skull and teeth—were all inflicted upon one person, the effect would be trifling compared with this deformity of the trunk.

A picture of a famous statue, acknowledged by all the anatomical and artistic world to be a perfect female form, is placed by the side of a model now held up for imitation in the fashionable world (*Fig. 19*). There are millions of American women whose forms show a fearful approximation to it.

Figure 20 shows the natural form of the skeleton of the chest in woman.

Figure 21 shows the skeleton of the chest of a woman deformed by tight lacing. This is not an extreme case.

Figure 22 shows a young woman who had for years indulged in the ordinary contraction of the waist with a great sink in the pit of the stomach, and whose health seemed ruined. Becoming

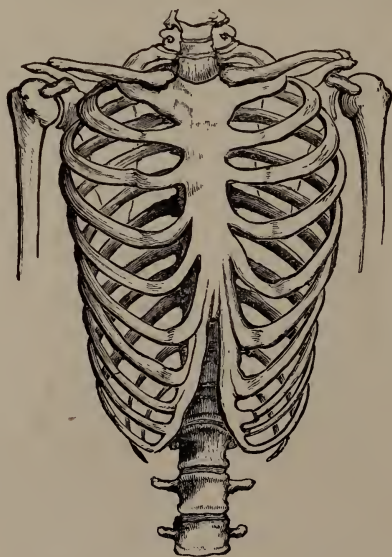


FIG. 21.—FORM OF SKELETON DEFORMED BY TIGHT LACING.

alarmed, and possessing true courage, she removed not only her corset, but made the garments about her waist as loose as the average man's vest, put a strong bandage around the lower part of the abdomen, forced the organs which had been crowded downward back up into their natural position, and now appears in the unfashionable form seen in the cut.

Of course, she has lost the fashionable sink in the pit of the stomach, but, as a slight compensation, she has a strong back,

and, with her new broad-soled shoes, can walk miles without fatigue.

She seems very happy. Let us drop a tear over that lost sink in the pit of her stomach. Saucy thing, she seems to have no sinking of any kind now.

Fashion is "that most inexorable tyrant to which the greater part of mankind are willing slaves."

There is something truly awful in the helplessness of the human race in the presence of this mysterious power. There is hardly a



FIG. 22.—FASHIONABLE AND UNFASHIONABLE FORM. (See page 18.)

conceivable folly or wrong which even superior minds will not practise at the instigation of fashion. The worst foods, the worst drinks, the worst dress, the worst possible habits are adopted if only they are in the fashion.

A striking illustration of the power of fashion occurs to me. Some years ago women wore enormous skirts, so large that you
 • never saw a movement of their legs. I remember being in a country village when one of those dresses which seem to have

been contrived with reference to a special study of the anatomical details of a woman's hips and legs appeared in that village. The exclamations of disgust and horror were general and intense. The writer explained to a company of ladies who were gesticulating and exclaiming over the gross indecency, that it was the coming mode; that after twenty years of modest concealment of their legs, women were about to adopt a fashion which was contrived with special reference to an exhibition of their anatomy, especially the hips and upper half of the legs. Two unmarried ladies, of about forty years, with flushed faces, sprang to their feet, left the room, and would not be appeased.

About three months later I visited the same village, and saw those two same maiden ladies dressed in the extreme of the mode, which had become of a most pronounced anatomical type.

Every one of us will deny his slavery. Men especially are loud in their denunciation of fashion; they are tireless in their patronizing twaddle toward women, and their repetition of the phrase, "What fools these devotees of fashion are."

I know a smart deacon who, at his own fireside, or in any social circle where he may happen to be, or in the conference meeting, is ever preaching about this "wretched slavery to fashion."

At one time long-tailed coats were worn. The next year the tails were short. What was my surprise to see the deacon about his place of business in a bobtail. I rallied him. But in a non-chalant way he remarked that he had purchased this because he found it so convenient about his business. I learned the name of his tailor, and dropped in to ask some questions. The statement of the tailor destroyed the deacon's little fiction about the convenience of a bobtail, and brought out the fact that he had had the skirt of his coat shortened two inches after it was finished, because an examination of the fashion-plates convinced him that that amount of bobbing was necessary to bring the coat into the mode.

He who essays the rôle of a reformer, who devotes himself to helping his fellows into a better life, finds the chains that bind them are two—*appetite* and *fashion*. These become more or less interwoven, but it is permissible to speak of them as two; and I have no doubt that on the whole, taking the world together, fashion does a great deal more harm than appetite. When we recall how much fashion has to do with our drinking usages, that most per-

sons drink because others do; when we recall the fact that our tables are set and our food cooked by fashion, that the variety of food as well as the kinds are determined by fashion, we shall inevitably conclude that our greatest enemy is that mysterious power we call fashion.

While we held four millions of blacks in slavery, the great mass of people were not lacking in sympathy and justice, but it was the fashion to belittle and condemn negroes, so our sense of justice and our sympathies were overwhelmed.

Women in America are pleading for liberty to do anything and everything that they can do, that they may earn an honest living, that they may secure health, strength, and independence, and all thoughtful people know very well that the welfare, the development, the prosperity of the nation, are bound up with the success of this movement among our girls and women. But as in the days of slavery the people, even of the better classes, refused to think and decide for themselves, so now they listen to the voice of fashion, and echo its utterances against "woman's rights" and "the strong-minded."

The Chinese question is another significant illustration. All who know anything of the Chinese (and it is shameful to decide their case without knowledge), all who know anything of them, know that, industrially considered, they are among the most valuable, if not *the* most valuable, immigrants that have ever come into our country. But it is the fashion to besmirch and berate them as filthy, thieving heathen. This fashion will probably continue for some years.

Numberless illustrations of the tyranny of fashion, and our pitiful helplessness will occur to every reader. You who are reading these lines will probably agree with what is said, but I fear you will take a long breath and declare that it always was so, and always will be so.

Some of us maintain little margins of liberty. We are not absolute slaves. We retain a little margin of freedom, like the white border of a printed newspaper. All the printed part we allow others to determine for us; so far we are silent, except to say amen and amen. But the little narrow border we reserve for ourselves. We think just a little about religion, and so far our condition is an improvement upon that of the priest-ridden people of the dark ages. We sometimes venture a little in politics; once in a

great while we refuse to support a bad man in our own party, and once in a very long time we support a good man in the opposite party. Rare people insist upon slight departures in dress, to adapt it to their individual needs. Sometimes we meet a person who actually thinks a little about his food, and insists upon kinds of food or methods of cookery which are not in the mode.

The question in which all earnest souls are interested is, how can we widen that narrow margin of freedom? All are eager in the opinion that in this direction lies human happiness and progress. For fifteen hundred years the most advanced races maintained so little of that margin of liberty that it does not appear in history. How shall we increase this little edge of freedom? The great hope is not in organizations of any kind, not in churches, governments, or what we call society. The great hope is in individual thought and courage. Communities never lead the way in this sacred work. It is the individual man or woman who must take the first step. If in your secret soul you see and know, act. You will find yourself happier and stronger with every step.

I will illustrate: Your feet suffer, you have corns, you walk with pain, and can walk but little. You know that if your shoe-soles were as broad as your feet these sufferings would cease. But broad soles giving this grateful freedom are not fashionable. Now go to your shoemaker, take off your right shoe, place your right foot on a sheet of paper, raise the left foot so that your whole weight may rest on your right foot. Lean forward so as to bring the weight on the ball of the foot. Have a pencil-mark drawn about it. Measure the width of the mark. If a woman, you will probably find it three inches and a half. Now take a seat, look your shoemaker calmly and steadily in the face, and in a clear, distinct voice address him in the following language:

"Sir, I wish you to make my shoe-soles three and a half inches broad at the ball of the foot. I wish my heels three quarters of an inch thick and two inches broad. I will come for the shoes when they are done, and I shall carefully measure them. If they lack an eighth of an inch of the measurements I have given you I will not take them." You will get just what you wish.

Now it is not to be supposed that you will have the courage at first to wear those shoes where any one can see them. You will wear them when walking out in the dark and about your house. But the great comfort and rest give you new courage, and after a

few weeks you venture to wear them in the day-time in the street, when the weather is rainy, and finally on some beautiful Sabbath morning, with God's smile over all the earth, you take your life in your hand, and boldly wear them to church. Soon you will inform your dearest friend that your pain and great fatigue, even in a short walk, have given way to a pair of new shoes. With flushed face and throbbing heart you show them. She will exclaim: "Oh, my dear friend, how dare you?" and she will go silently away. Your courage fails; with many sighs you put the new shoes away, and crowd your feet into the fashionable ones. But two days of suffering and crippled walking rouses your temper, and you begin again at home and on the sidewalks at night. You walk five times as much as before, and the walking improves your health. As courage often rests upon physical health, the time soon comes when you are free. Now you become an apostle of liberty for feet.

Turning to another feature of your dress, you find yourself suffering from back-ache, bearing down, and a general sense of soreness, heat, and fulness in the lower part of the abdomen; and you become convinced that your corset, which has reduced your waist eight or ten inches, has pushed what is within the corset downward, and displaced the organs at the bottom. You think of it long and much, and finally in some inspired moment resolve that you will liberate yourself. You think of Patrick Henry and others who have declared for liberty. Perhaps with a clenched fist you exclaim: "Give me liberty or give me death."

Now let me forewarn you. In the first place you must meet face to face with your dress-maker. She may seem pliant and obedient, but your approach to her now is full of danger. She will throw up her hands in holy horror, and exclaim:

"Oh, dreadful! Why, Mrs. Brown, all the ladies in town will laugh at you. You will look like a perfect guy. Mrs. A, Mrs. B, Mrs. C, and all the others, will sneer, and say that you have turned 'reformer.' (Not thief, but worse than that—a reformer.) Of course I will make your dress in any way you please, but remember people will talk, and you can't stop them."

You go to your minister's wife. Certainly she will support all that is right. You are confident that your new resolutions will meet with her approval. But she will quote Scripture to you to the effect that we must be "wise as serpents and harmless as doves," or that you must be "all things to all men," and at length,

after consulting her, and several other very dear friends, you go home heart-broken, and sit down to think.

I assume that you are a clear-headed, strong-souled woman, and you resolve, come what will, that you will be free. So you make the dress about your waist quite as loose as your husband's, put a bandage about the lower part of your abdomen, or, if you please, one of the simple abdominal supporters, to lift the displaced organs back into their natural place. Then that you may not constantly challenge attention, you purchase a beautiful sacque, ornamented with silk embroidery, to hang about your waist and cover your form. Of course your friends will wonder what it can all mean, and your confidential intimates will venture to ask what you have been doing to yourself.

You explain to them that the corset was killing you, that you suffered constant back-ache, that the constriction about your waist had so jammed the contents of the abdomen down upon the organs at the bottom, as to produce a sense of bearing down, heat, and pain. You inform them that you have begun the use of another kind of corset, or what is equivalent to it, about the lower part of the abdomen to lift the depressed organs back into their place, and that hereafter you shall not indulge in any pressure about the middle of your body.

Your friends will mourn over you more profoundly and sincerely than they would if some question of your virtue had been raised.

Of course it is easier to float with the current, to do as others do, to never challenge the wisdom of the fashion. But a great many of us are not quite satisfied to live in this way. With God overhead and our suffering fellows all about, we are not content to let things float.

This is the meaning of the little book you hold in your hand. I am trying to help you, dear reader, to see the paths which lead to health, comfort, and happiness. I do not wish to compel any human being to walk in these paths, I am only trying in my imperfect way to show you where the lines of light fall.

(*From the North American Review, December, 1882.*)

THE HEALTH OF AMERICAN WOMEN.

BY DIO LEWIS.

THERE is a popular notion that the ill-health of our women is natural—that they are the victims of functions whose exercise constitutes a sort of invalidism. “The weaker vessel” is a favorite phrase.

As a prerequisite to an effective argument on the injuries produced by woman’s dress, we must determine her normal condition. We may prove that she compresses her waist fifteen inches, but the popular ignorance of the organs within the waist will make no telling inferences. The first and indispensable step is to show that woman in her normal state is a healthy, vital being. Then we shall be prepared to measure the influence of her dress and other agencies.

Among the animals about us the female is as hardy as the male. Among our immigrants of the rougher sort the women are quite as tough as the men, and work hard more days in the month. For thirty years, in meeting missionaries and travellers who have visited the peoples of Asia and Africa, the American Indians, and other nations and tribes not well known to us, the writer has persistently asked about the health of the women. In no case has he been told that women are in worse health than men, while in more than one instance it has been stated that the health of women is better, because of various evil habits among men.

That man of truth and fine manners, William Crafts, the fugitive slave, bade farewell to the land of the free forty years ago, and settling in England, won the confidence of many English merchants, in whose interest he resided twelve years in Dahomey, Africa, in the management of the palm-oil trade. On returning to America, he gave us some interesting facts about the women of Dahomey. They are quite as large and strong as the men, and manage the business affairs of the country. Before leaving Dahomey the last time, in a conversation with one of the king’s body-guard, a stalwart Amazon, he asked what she thought of men as soldiers.

"Men can't fight," she cried. "We three thousand women of the king's body-guard would like to meet six thousand men; we'd show them how to fight."

"But," expostulated Mr. Crafts, "you should not speak of men in such a hateful spirit."

"How can a decent woman speak of the contemptible wretches in any other way?" was her spirited reply.

About the size of the Dahomey women, Mr. Crafts was asked again and again. He assured us that he had carefully observed, and was confident they were quite as large as the men.

In a long foot journey through Ireland the writer saw thousands of barefooted young women nearly as large and strong as the young men; and in different parts of Europe, in the rural districts, was struck with the vital proportions of the women. Those who have seen Indians on their marches through our Western wilds, declare that the women are second only to the ponies in the size of their loads and the distance they carry them.

The reader who concludes that woman may, by nature, be man's equal in health and vitality will doubt the possibility of her recovery from the injuries of dress and house-life. The writer has recently spent three summers camping in the mountains of California. From time to time ladies joined our party. Quite a number of these were delicate invalids seeking health. They all adopted the rough, short, mountain dress, and rode astride. Several of them became the most adventurous and enduring members of our large company. As an illustration, Miss M., from New York, a wealthy and highly accomplished lady of twenty-six years, may be mentioned. We gladly welcomed her, though we feared her health might detain the party. Her first week amused us. She was certain that, with the removal of her corset, she would "fall to pieces," and she could never, never ride astride, because it was "so awful," and she was sure the peculiar position would make her troubles worse. On leaving us she said: "I have spent five months in the saddle. When I came I was in wretched health. Now I am as free from pains and weaknesses as these squaws." Such miracles were common in our camp-life.

The Boston Normal School for Physical Education trained and graduated 421 teachers of the new School of Gymnastics. The graduates were about equally divided between the sexes. A considerable proportion of the women were school-teachers in broken

health, seeking in the new profession a better means of living. The average health of the women was, in the beginning, lower than that of the men. But, with the removal of the corset and the long, heavy skirts, and the use of those exercises which a short and very loose dress renders easy, a remarkable change ensued. In every one of the ten classes of graduates, the best gymnast was a woman. In each class there were from two to six women superior to all the men. In exhibiting the graduating classes from year to year on the platform of Tremont Temple, women were uniformly placed in the more conspicuous situations, not because they were women, but because they were the finer performers. Dr. Walter Channing, who was one of the professors in this normal school, often spoke with great enthusiasm of the superiority of the women.

A convincing experiment was made upon a large number of girls at Lexington, Mass. A school for young ladies was announced and large buildings prepared. During four years of personal management by the founder of the school, nearly three hundred young women were subjected to a new and peculiar regimen, to determine the possibility of improving their bodies during their school life, as the bodies of young men are improved in some of the German universities. An exceptionally full curriculum of studies was adopted, and a large corps of teachers, including such distinguished names as Theodore D. Weld, Catharine Beecher, and Zerdahelyi, labored with enthusiasm in the brain-work. The pupils were pressed harder, probably, than in any other school in New England. The girls averaged about seventeen years of age, and came from all parts of the country, including California, Central America, and the West Indies. They were largely from wealthy families—delicate girls, unable to bear the artificial life of fashionable seminaries, and were drawn to the Lexington school by its fame for body-training. The constant dress of the pupils, like that of the Normal School, was short and loose, leaving the girls as much liberty as boys have in their gymnasium dresses. The results of the physical training at Lexington are well known.

On entering the school, pupils were measured about the chest, under the arms, about the waist, the arm, and the fore-arm. The average gain for eight months about the chest was $2\frac{1}{2}$ inches; waist, 5 inches; arm, $1\frac{1}{2}$ inches; fore-arm, about 1 inch. The

work was so hard that, with all this remarkable development, the weight of the pupil was often lessened. Of course, the girls came with injunctions from mothers not to climb stairs, and with letters from family physicians urging moderation in gymnastics, and prescribing the horizontal position a number of days each month. With the corsets and long skirts in which they came, these injunctions and cautions were not unwise; but, with the change of dress, became absurd.

And now, with a full knowledge of all the facts familiar to hundreds of grateful parents, the writer affirms that, giving little or no attention to periodicity, the girls worked through the entire month in those extreme stridings and other vigorous exercises of the legs and hips, contrived to counteract the evil effects of the long, imprisoning skirts, and that in the four years not only was no harm done by this constant and dreadful violation of Dr. Edward Clarke's counsels, but that in no instance did a pupil fail to improve in health. The results may be described as follows: Pupils came with dread of stairs, with backache, palpitation, and other sufferings which may not be named here, and in a few months could do the full and hard gymnastic work of the school, dance three evenings a week, go upstairs without symptoms, and walk five to ten miles on Saturday without inconvenience. A common exclamation among the pupils was this: "What a slave I was! Everything was toil and suffering. I have now just begun to live!" And all this happy change came of abandonment of corsets, the adoption of a simple, physiological dress, with the exercise which this change in dress renders easy. The change in health and capacity often seemed magical. If this paper were designed for the eyes of medical men only, certain facts might be given which would surprise them, and leave no doubt that we have utterly failed to comprehend the mischief done to the growing form by the present modes of dress.

The reader may think that camp-life in the mountains of California, a course of training in the Normal School for Physical Education, or four years' drill in the school at Lexington, will account for happy changes without any change in dress. We saw many ladies in the mountains seeking health in long skirts and corsets, and their health improved, but the physiologist will assure us that the improvement could not be muscular and radical. As to exercise in the gymnasium, the observation of thirty years in ladies'

seminaries leads to the conviction that girls in corsets seriously endanger their welfare when they try to exercise beyond gentle walking and dancing. All attempts at free arm or leg work must prove mischievous. For many years we have cautioned corseted women against the gymnasium, and have seriously urged easy-chairs and lounges. The advice given by Dr. Edward Clarke, and repeated by thousands of doctors to their lady patients, to lie down as much as possible, and periodically spend a week in bed, is, if a corset be worn, not only wise and merciful, but indispensable. To ladies who declare that they cannot abandon their corsets, the writer uniformly gives the same advice.

The errors in woman's dress are:

1st. The corset, which reduces the waist from three to fifteen inches, and pushes the organs within, downward.

2d. Unequal distribution. While her chest and hips are often overloaded, her arms and legs are so thinly clad that their imperfect circulation compels congestion of the trunk and head.

3d. Long, heavy skirts, which drag upon the body, and impede the movements of the legs.

4th. Tight shoes, which arrest circulation, and make walking difficult. High heels, which increase the difficulties in walking, and so change the centre of gravity in the body as to produce dislocations in the pelvic viscera.

Lack of space forbids details under each of these heads, so we speak mostly of the corset, by far the greatest evil.

Do women practise tight-lacing? Since beginning this paper, we have asked this question of more than a score of ladies. The answer is "No." One lady, whose waist has been reduced more than eight inches, declares that she has heard about this lacing all her life, but has never seen it. She adds: "I wear a corset, though, from my immense size (nineteen inches) you would hardly think it. And I fancy that ladies generally manage about as I do; they wear a corset to keep their clothes in shape; but it hardly touches them." In forty years' professional experience with the wearers of corsets, we cannot now recall a single confession, even from those who had reduced their waists from ten to fifteen inches. One can write freely on this subject, with no fear of hurting the feelings of lacing women, for no one of them will imagine herself guilty; and one can speak as disparagingly as he pleases of diminu-

tive figures, for the smallest woman regards herself as "perfectly immense."

We have talked with several corset-makers, and sum up their testimony as follows: Fashionable ladies, and thousands who imitate them, purchase corsets which are from three to ten inches smaller than their waist, and then lace them so as to reduce their waists from two to eight inches. More than one corset-maker has placed the averages higher than these figures.

Many inquiries have been made of those artists who make a special study of the female figure. Their testimony is stronger than that of the corset-makers. One artist, who is a recognized authority in this department, has assured us that in painting portraits of women, no good artist will paint the laced figure. The subject must hide with drapery what the artist regards as a hideous deformity. An eminent artist, with a good eye and thorough knowledge of proportion in the female figure, permitted the writer to sit by his side on a thoroughfare when ladies were out in force, and expressed his opinion about their waists.

"That one is reduced six inches; that one ten inches; that young lady five; that one twelve; that large woman has reduced her waist fully fifteen inches." "What proportion of these ladies would you paint in their corsets?" he was asked. "I have not seen one that I would paint without asking her to cover her deformity."

If any one will devote an hour to a study of the female figure as seen in classic art, and will then give another hour to street observations during the fashionable promenade, with an aching heart he will go over to the ranks of the discouraged. He cannot forget that these are to be the mothers of our next generation.

Many physicians engaged in general practice have been asked what proportion of their practice comes of displacement of the pelvic viscera. Their average testimony is that more than half of their professional business comes of this one malady.

A letter just received from the most able specialist in the treatment of diseases of women known to the writer (a professor in a prominent medical college) contains the following language: "I am sure, without being able to demonstrate it, that ninety per cent of the so-called female weaknesses have their origin in corsets and heavy skirts. They not only depress the pelvic organs by their pressure and weight, but weaken all of their normal efforts." A

number of experienced practitioners in this department of medicine, hearing of the preparation of this paper, have written letters expressing the same decided opinion.

But may not a corset be worn so loose as to do no harm? If by a corset, a machine with steel, whalebones, or other stiffenings be meant, the answer is "No!" The corset is hard and stiff, while that portion of the body which it surrounds is particularly soft and flexible. If the wearer could always stand erect, with the corset so loose as not to touch her, no harm would be done. But she must sometimes sit, when the parts under the corset are greatly enlarged. Bending forward, as in sewing or reading, she leans against the upper ends of the whalebones, and then the pressure against the upper ends is returned against the abdomen at the lower end. If the wearer will put her hand under the lower end of her corset while she leans forward against the upper end, she will be surprised at the pressure. This pressure upon the abdomen, during all the long hours of sitting, does serious mischief. In one word, it may be added that, with every bending of the body, even the very loose corset is brought in contact with yielding parts. The floating ribs, that masterpiece of the human mechanism, and those soft parts of the person covered by the corset, cannot perform the undulating and vital movements incident to respiration and digestion, even under a very loose corset. Then what must we say of a corset which is not loose?

The corset does more than squeeze the waist. After forcing a considerable part of what belongs within the waist downward into a lower part of the abdomen, to prevent an unseemly protuberance the corset is so contrived as to spread over all that lower part, force it down, and, with a firm layer of steel or whalebone, hold it there. This presses the abdominal viscera down upon the organs in the pelvis. Then, to end this tragedy with a farce, people put on serious faces, and wonder why women suffer from prolapsus uteri.

A numerous and busy class of medical specialists are devoted to the treatment of malpositions of the organs in the lower part of woman's abdomen. These malpositions are, directly and indirectly, the source of a large part of her ill-health and sufferings. Is it unreasonable to say that a pressure about the middle of the body, which reduces the waist from three to fifteen inches, must push what is within the waist downward, and must inevitably pro-

duce those malpositions of the organs at the bottom? Can a sane woman imagine any other result?

A girl who has indulged in tight-lacing should not marry. She may be a very devoted wife, but her husband will secretly regret his marriage. Physicians of experience know what is meant, while thousands of husbands will not only know, but deeply feel the meaning of this hint.

Recalling Mr. Crafts's testimony touching the size of the Da-homey women, one is led to say that these microscopic girls that swarm about our schools and chatter in our streets are the curiosities of what we call "high civilization." They are found only among the lacing peoples. Wherever women give free play to their lungs and stomachs, they grow as large, or nearly as large, as men.

This "high civilization" is curious. Its avowed aim is a nobler manhood and womanhood. But, while we are so proud of our telegraphs and railroads and grand inventions and magnificent improvements and large corn crops, that we run our printing-presses all night to proclaim our glory to the rising sun, our doctors, standing in the midst of a nation of men sucking tobacco, caution a nation of corseted women to go slow and lie flat on their backs three months every year.

DIO LEWIS.

A very spirited discussion upon tight-lacing appears in "KNOWLEDGE," Prof. Proctor's London magazine. A person who signs himself "An Observer," defends the corset, while Prof. Proctor condemns it. In the issue of Feb. 9th, referring to a paper on the "HEALTH OF AMERICAN WOMEN," which appeared in the December number of the NORTH AMERICAN REVIEW, and which took strong grounds against the corset, Prof. Proctor, over his own name, says:

"I agree with everything Dr. Dio Lewis has said about the tight-lacing of American ladies. On what point 'An Observer' supposes I contradict Dr. Lewis, I fail to see. Dr. Lewis remarks that some American ladies *say* nineteen inches waist measurement is immense, and I note that American ladies do not *think* so; it is tolerably clear that Dr. Lewis knows that very well. He suggests it very neatly. I will undertake to say that not one of his American readers (and he was writing for Americans) misunderstood him, as 'An Observer' seems to have done."

RICHARD A. PROCTOR.

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DIO LEWIS.

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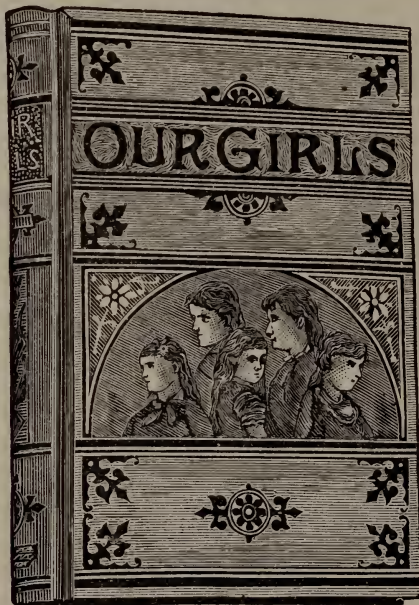
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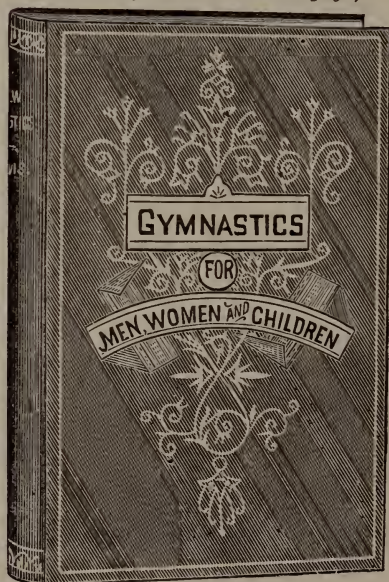
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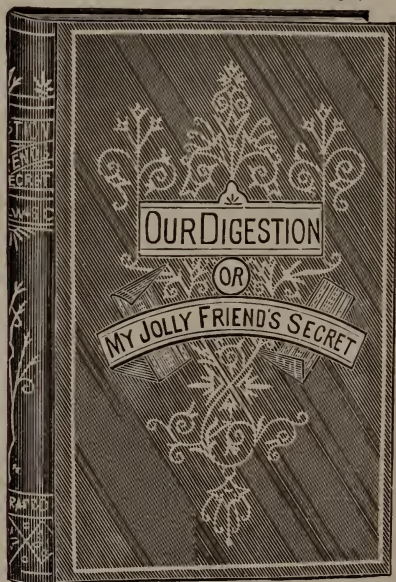
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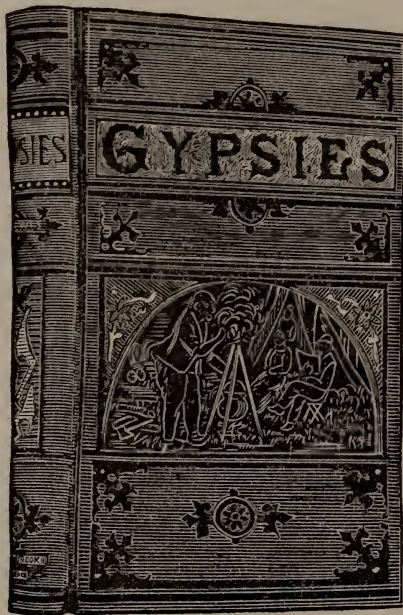
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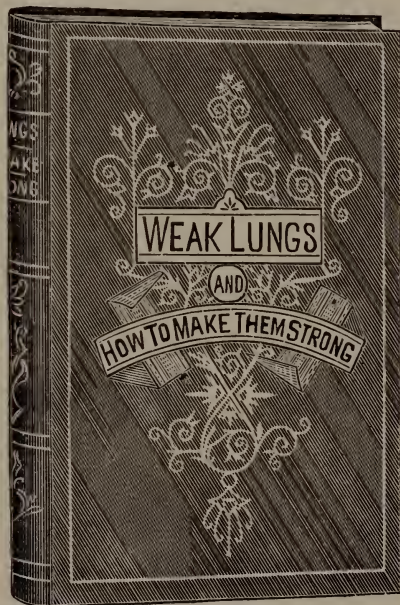
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OF THE VOLUME

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Announced and Described on pages XVI. and XVII. of this Catalogue.

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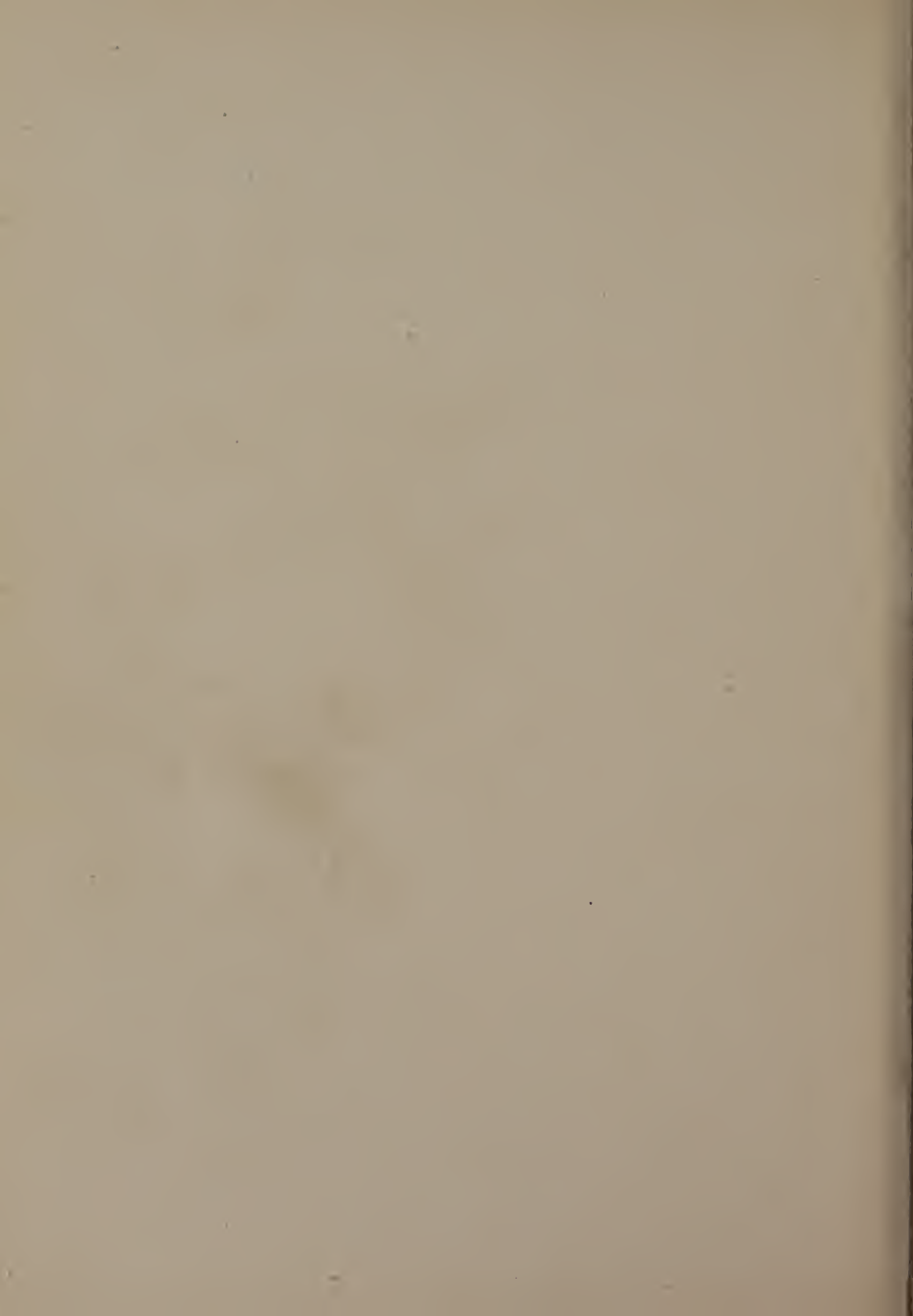
The tooth brush cannot keep the teeth clean because it cannot get in between the teeth. The tooth-pick is better, but this only removes the coarser bits.

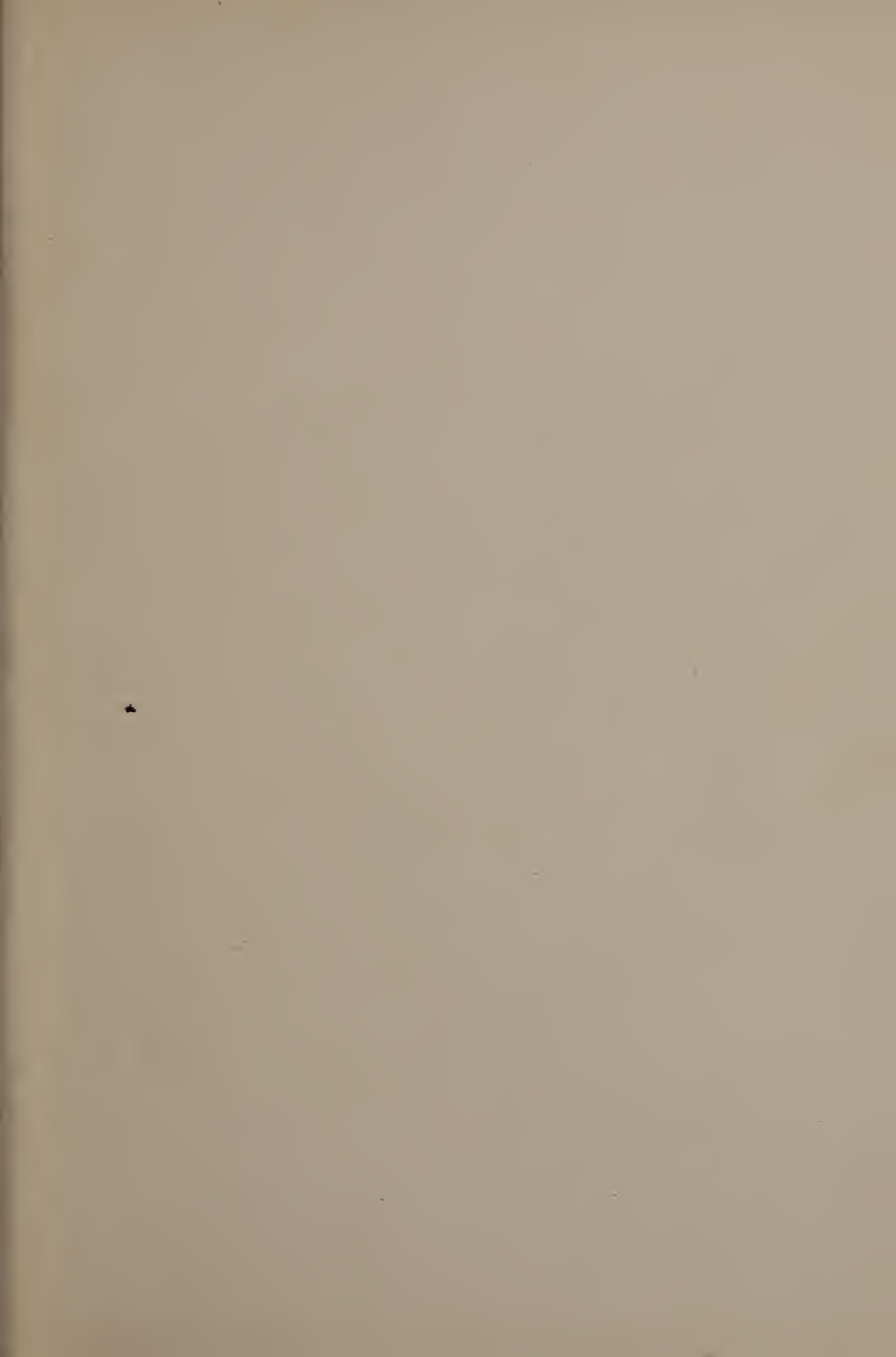
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